Corporate Governance and Political Involvement in Japan and Taiwan

Hsin-Yi Yu

PhD – The University of Edinburgh – 2006

Acknowledgement

I will always remember the words my supervisor, Professor Brian Main, told me in the beginning of my study.

"It is a very daunting time when one begins the PhD. It seems a long journey. But I am sure I do not have to tell you, even the longest journey can be achieved by taking one step at a time."

These words always accompany me when I feel depressed, panicked, or disheartened. Even in the tearful moments, these words prevent me from crying as I know that Professor Brian Main will always be there to help and encourage me. Definitely, the completion of my PhD should be ascribed to the best supervisor in the world, Professor Brian Main.

I also attribute the completion of my PhD to my parents, Shih-Wei and Pi-Hsia. Without their support, both financially and spiritually, obtaining the PhD degree would have been an impossible mission. Through their encouragement, I have realised that my limit is much higher than I expected. The words they gave me when I left for Edinburgh will be etched in my mind forever.

"No matter what happens, you can always come home."

Undoubtedly, my husband, Li-Wen, has been my strongest safety net during the four years. We not only enjoyed the wonderful life in Edinburgh but also helped each other in academic research. Without this optimist, my life in Edinburgh would be dull. I hope we can challenge, encourage and cherish each other forever. As he once said,

"Don't worry. At least, we are together."

My sincere thanks also go to Professor John Henley, Professor Trevor Buck, Dr. Chris Pong, and Mr. Makoto Seta. Your suggestions made the thesis more complete. Furthermore, I also want to thank my friends in the UK, in Taiwan, in China, in Japan, in the US, in Europe, and in Singapore. Every moment we have spent together will be my treasure forever. You all give me a warm seat in the world. It is difficult to explain in a few words, the only word I can give you all is "Thanks."

Hsin-Yi in Edinburgh
December, 2006

Declaration

I certify that this thesis does not incorporate without acknowledge any material previously submitted for a degree of diploma in any university; and that to the best of my knowledge and belief it does not contain any material previously published or written by another person where due reference is not made in the text.

Hsin-Yi Yu, November, 2006

TABLE OF CONTENTS

List of Tables and Figures

Tables

Figures

Glossary of Abbreviations

ARDF	Accounting Research and Development Foundation
BoJ	Bank of Japan
CBC	Central Bank of China
CFA	Confirmatory Factor Analysis
DOI	Degree of Internationalisation *or* Degree of Internationalisation Scale
ESOs	Executive Share Options
FDI	Foreign Direct Investment
FPI	Foreign Private Issuer
GLCs	Government-linked Companies
IASB	International Accounting Standards Board
IDP	Investment Development Path
JCAA	Japan Corporate Auditors Association
JCGF	Japan Corporate Governance Forum
LTIP	Long-term Incentive Plan
MITI	Ministry of International Trade and Industry
MoF	Ministry of Finance
MOEA	Ministry of Economic Affairs
MOPS	Market Observation Post System
NFSF	National Financial Stabilization Fund
NICs/NIEs	Newly Industrialized Country or Newly Industrializing Economy
Non-GLCs	Non government-linked Companies
NSi	The Network-Spread Index
NYSE	New York Security Exchange
OLI	Eclectic Paradigm
OTC	Over-the-Counter Market
SEC	Securities and Exchange Commission
SEM	Structural Equation Modelling
SOE	State-owned Enterprise
TASi	Transnational Activity Spread Index
TEJ	Taiwan Economic Journal
TDI	Two Dimensions of Internationalisation
TMT	Top Management Team
TNC	Transnational Company
TNi	The Index of Transnationality
TSE	Tokyo Stock Exchange
TSEC	Taiwan Stock Exchange Corporation
TSMC	Taiwan Semiconductor Manufacturing Company
UNCTAD	United Nations Conference on Trade and Developm

Abstract

This thesis examines issues associated with the interaction of government and financial institutions in the operation of a company through the board of directors in Japan and Taiwan. Specially, it highlights the relationships between a company, the main bank system, and the system of *amakudari* (appointing retired bureaucrats to the board of public companies). The focus is on why government and financial institutions intervene in the operation of a company, and whether the intervention of government and financial institutions is related to the subsequent operation of a company through the board of directors. The empirical results suggest that governments and financial institutions tend to appoint representatives to the board in order to help troubled companies. On the other hand, a negative relationship is established between the presence of retired bureaucrats (*amakudari*) and subsequent firm performance and the degree of internationalisation. Thus, while the system of *amakudari* may use its power in an attempt to save troubled companies, the argument that monitoring ability of the board may be jeopardised to the detriment of firm performance and the degree of internationalisation is supported. The empirical results also demonstrate that intervention of governments and financial institutions is an integral part of the operation a company in Japan and Taiwan.

Furthermore, with the latest reform of corporate governance in Taiwan, the thesis also introduces the institutional background of incentive payments and sub-committees and examines whether the level and the structure of top executives' compensation and incentive payments are related to firm performance and the corporate governance mechanism. The empirical results indicate that the alignment between executives' and shareholders' interests is not less efficient in government-linked companies (GLCs) compared to non-government-linked companies (non-GLCs). Additionally, although the Taiwanese authorities have started to reform corporate governance in Taiwan, the grants of incentive payments to top executives are not necessarily related to performance or the corporate governance mechanism, such as the ratio of outside directors.

Chapter One
Introduction

1.1 Introduction

Informal relationships are often mentioned as one characteristic of Asian economies that is used in the formulation and implementation of government policy. Many studies conclude that the so-called "economic miracles", and especially that of Japan during the 1980s and the first half of the 1990s, mainly happened due to the peculiar characteristics of these countries' economic systems and the intervention of government (e.g. Aoki et al., 1996; Porter et al., 2000). Against the background of these claims, the concept of 'relational capitalism' has been presented as a viable alternative to the stock market capitalism of Western countries (Raghuram and Zingales, 1998; Kang, 2002). Examples of such informal relationships can be found in Japan (*keiretsu*, *amakudari*), Korea (*chaebol*), China, and Taiwan (family companies). It is also pointed out, however, that the existence of this close relationship between government sectors and companies has often bordered on corruption.

In more recent years, after the major economic crises that struck many Asian countries in the late 1990s, analysis focused on the perceived weaknesses of relational capitalism (e.g. Haggard, 2000; Claessens et al., 1999; Van Rixtel and Hassink, 2002; Colignon and Usui, 2003), manifested in a lack of disclosure and transparency, the absence of an independent corporate governance mechanism and outright corruption (Monks and Minow, 2004). For example, due to the lack of disclosure and transparency, the Long-term Credit Bank (LTCB) in Japan collapsed in 1998 because of nonperforming loans (NPLs). It is clear that although governments in Asian countries recorded some remarkable economic achievements in the past, certain characteristics of political intervention have been regarded as inefficient. Based on the work of Shleifer and Vishny (1998), the government plays

the role as a grabbing hand. In the grabbing hand model, politicians will divert the objective from profit maximisation to pursue their own political goals, such as maximizing domestic votes. Therefore, informal relationships which arise through political and financial intervention may result in weak corporate governance in Asia. Many scandals, such as Livedoor in 2006 in Japan, Procomp in 2004[1] in Taiwan, and Pacific Electric Wire and Cable in 2005 in Taiwan, highlight the problems of political intervention and the weakness of corporate governance in Asia. Based on the grabbing hand model, the basis of hypotheses in this thesis is the argument that the intervention of governments and financial institutions is the source of inefficiency.

Japan and Taiwan have been characterised by the close relationship between government and business, especially in the 1980s in Japan and the late of 1970s in Taiwan. Until now, government in Japan and Taiwan still intervenes in the operation of public companies. Given the scandals and problems resulting from political intervention and weak corporate governance, many studies now conclude that some reassessment is called for (e.g., Lee and Yeh, 2004). Meanwhile, recent financial scandals in Taiwan mentioned above have also exposed the weakness there of corporate governance when subject to political intervention. Therefore, given the similarity in political intervention and the financial system (e.g., the main bank system) between Japan and Taiwan, this thesis sets out to compare the difference in the relationships between governments, financial institutions, and companies in the two countries.

There is a large volume of literature on corporate governance that establishes unequivocally that corporate governance mechanisms affect the operation of companies. Most of this literature supports the adoption of specific governance mechanisms (e.g., outside directors or sub-committees on the board) as currently employed in developed western countries, such as the US and the UK (Mueller,

[1] Taiwan's market regulator has compared the bankruptcy scandal at Procomp Informatics in 2004 to the collapse of the giant US energy company Enron in 2001. Procomp Informatics is a major Taiwanese computer hardware maker. It has been the subject of a Financial Supervisory Commission investigation into claims that its executives colluded with overseas sales agents to falsely boost sales revenue, illegally leveraged assets frozen due to past improprieties, and manipulated share price.

2006). However, there is reason to question whether these findings are equally applicable to countries in East Asia, where political intervention is widely regarded as a critical factor in company operations, due to the informal relationships that exist between the public and private sectors (Van Rixtel, 2002; Dunning and Narula, 1996; Kang, 2002; Aoki et al., 1996). Even omitting this political factor, corporate governance mechanisms originating from western countries may not necessarily be applicable in East Asian economics.

Meanwhile, although government in Japan and Taiwan acts similarly, the differences on corporate governance may cause dissimilar outcomes. Except for insider-oriented boards and the two-tire system and which include a board of directors and a board of auditors concurrently, board composition and ownership structure in Japan and Taiwan are different. First, Japanese boards are typically comprised mostly of former employees and representatives from affiliated companies while Taiwanese boards are mostly composed of family members. According to agency theory, this difference implies that boards in Japan and Taiwan may have different incentives and behaviour. These family members who sit on the boards may have stronger incentive to monitor executives while representatives from affiliated companies are sent to solidify good relationships.

Therefore, recognising the similarities and differences, this thesis investigates the intervention of governments and financial institutions in the operation of a company through its board of directors. From the viewpoint of firm performance, the first question we examine is that why government and financial institutions intervene in the operation of a company. Given the importance of corporate governance and the informal relationships between directors and government bureaucrats in Japan and Taiwan, we hypothesise that firm performance may be correlated with subsequent intervention of government and financial institutions. Accordingly, the second question is whether the intervention of governments and financial institutions is correlated wit subsequent firm performance.

In addition to firm performance, this thesis also focuses on the degree of

internationalisation (DOI) in the second topic. While firm performance is commonly the focus when evaluating the operation of a company, it is also common for governments and financial institutions in Asia to support or regulate the international activities of companies and thereby influence the strategy of internationalisation of a company (Sim and Pandian, 2003). Based on the grabbing hand model (Shleifer and Vishny, 1998), the intervention of governments and financial institutions is likely to be negatively related to DOI. In order to understand the intervention of governments and financial institutions more comprehensively, it is necessary to also examine DOI. To do this, we first examine whether the argument that DOI influences the intervention of government and financial institutions through the board of directors is supported by our data. Accordingly, we investigate whether such intervention is associated with subsequent DOI.

By laying bare the interplay between government, financial institutions, the board of directors, and the operation of companies, we can try to understand the possible reasons for the intervention of governments and financial institutions in Japan and Taiwan. With the benefit of such understanding, governments and financial institutions in Japan and Taiwan could appreciate the weakness or strengths of intervention and adjust their policies accordingly. As an example of such policy initiatives, the Financial Supervisory Agency (FSA) was established in 1998 in Japan. The FSA is responsible for supervising the management of banks and other financial institutions. It has established a more disciplined relationship with individual banks to mitigate the problems caused by informal relationships.

In addition to the two topics of firm performance and DOI, a third topic is investigated here, namely top executives' compensation and incentive payments in Taiwan. Due to several severe financial scandals, the authorities in Taiwan have started to reform corporate governance. Related regulations and guidelines have been established within the last five years. These new laws or requirements have significantly improved the disclosure of top executives' compensation and incentive payments, thereby allowing us to investigate the granting of share-based compensation. In this thesis, we first discuss this recent legal reform of corporate

governance in Taiwan and then try to examine the relationship between top executives' compensation and incentive payments and the corporate governance mechanism.

There are three main research questions regarding this topic. First, is there a relationship between top executives' compensation and incentive payments and other governance variables? Second, whether corporate governance mechanisms provide an alternative to the use of incentive payments? Furthermore, based on the grabbing hand model (Shleifer and Vishny, 1998) which demonstrates that politicians may pursue their own profits at the expense of the companies' interests, the third question we ask is, do non-government-licked companies (non-GLCs) better align the interests of top executives with the interests of shareholders? We seek to discover what determines the level and structure of top executives' compensation and incentive payments. By understanding this relationship, we hope to better understand the efficiency of share-based compensation in Taiwan.

1.2 Thesis Overview

In this thesis, we first discuss, from the viewpoint of firm performance, why government and financial institutions intervene in the operation of a company through the board of directors. We then investigate the relationship between the intervention of government and financial institutions and firm performance through the board of directors. Following this topic, we also investigate the similar relationships from the viewpoint of DOI. Furthermore, given the more transparent disclosure of share-based compensation and the lack of literature regarding top executives' compensation in Taiwan, this thesis also introduces the institutional background of top executives' compensation and incentive payments in Taiwan and investigates the relationships between the share-based compensation to top executives' and the corporate governance mechanism in that country.

The context of political involvement and the institutional background of corporate

governance in Japan and Taiwan are provided in Chapter 2, which addresses business-government relations and the specific characteristics of corporate governance in Japan and Taiwan. It is shown that, in general, governments in Japan and Taiwan have the power to control the operation of specific companies by appointing ex-bureaucrats to the board of directors, thus influencing company operations and supporting projects favoured by the government. In addition to the existence of political involvement, Japan and Taiwan also share similarities in board structure and institutional framework. Consequently, the various characteristics of Japanese and Taiwanese corporate governance are discussed, such as the board of auditors and the main bank system in Japan and the passive institutional investors in Taiwan. A comparison between NYSE standards and Japanese and Taiwanese corporate practice is also included in Appendices.

Chapter 3 addresses internationalisation in Asia, beginning with an outline of the theories on internationalisation. In addition to firm performance, the intervention of government and financial institutions is also related to international strategies (Dunning and Narula, 1996). However, most internationalisation theories are largely based on models of western multinational corporations (MNCs) (Sim and Pandian, 2003). Since Asian companies generally exhibit specific characteristics (e.g., political involvement) and different internationalisation paths, this chapter contextually examines the role that home governments in Asia play in internationalisation.

Hypotheses for the relationship between the intervention of governments and financial institutions and firm performance, as well as the relationship between the intervention of government and financial institutions and DOI are established in Chapter 4, drawing on the existing literature. We first hypothesise that government and financial institutions will intervene in a company when firm performance is poor. Furthermore, drawing on the observed intervention of governments in the internationalisation of companies in East Asia, we also build hypotheses to examine whether DOI itself is associated with the intervention of governments and financial institutions. The thesis then goes on to develop hypotheses that examine whether such intervention is negatively related to subsequent firm performance and DOI. The

possibility of the inefficiency of government intervention leads us to hypothesise that subsequent firm performance and DOI will be negatively related to the intervention of governments and financial institutions.

Chapter 5 introduces structural equation modelling (SEM), which is the main empirical methodology used in this thesis. SEM combines confirmatory factor analysis (CFA) and path analysis, and utilises the concept of latent variables to examine relationships using variables which cannot be observed directly (e.g., internal governance). Furthermore, unlike traditional regressions, the structural part of SEM links latent variables with each other by using simultaneous equation modelling. In addition to direct relationships between latent variables, we can also estimate the indirect relationships between latent variables. Moreover, this chapter also introduces the sampling frame, the data, and the derived variables used in this thesis.

The SEM empirical estimates of the relationship between the intervention of government and financial institutions and firm performance through the board of directors are reported in Chapter 6. These results support the argument that poor firm performance will result in the intervention of governments and financial institutions in Japan and Taiwan. For example, the governments and financial institutions will appoint representatives to the board to help troubled companies. Specially, the government and financial institutions in Taiwan will intervene in the operation of a company through the board of directors, whereas the boards in Japan do not possess this intermediate role. However, such intervention of governments and financial institutions is not positively associated with subsequent firm performance and the subsequent monitoring ability of boards. Even when these troubled companies employ many such retired bureaucrats to build an informal network, the relationship between such intervention and subsequent firm performance in Japanese and Taiwanese companies is not positive.

Chapter 7 presents the empirical results of SEM for the relationship between the intervention of government and financial institutions and DOI. The results indicate

that DOI in Japan is negatively related to the intervention of government but positively related to the intervention from financial institutions. However, DOI in Taiwan is negatively related to the intervention from both the government and financial institutions. Unfortunately, intervention of the government and financial institutions in Japan and Taiwan is not accompanied by higher subsequent firm performance and DOI.

Chapter 8 launches a distinct discussion concerning top executives' compensation in Taiwan. A great deal of work has been done on CEO compensation in both the US and the UK. However, the Anglo-American approach to the alignment between top executives' and shareholders' interests may not be applicable in Asia because Asia has only been conscious of the importance of corporate governance after the Asian financial crisis (Chen, 2002). Since 2000, the Taiwanese authorities have initiated a series of reforms in the regulations and guidelines of corporate governance that have significantly improved the transparency of reporting of top executives' compensation. Unfortunately, top executives' compensation in Japan remains as topics for which it is difficult to obtain precise data. Most data are vague or confidential (Kubo and Kato, 2006). Therefore, this thesis does not include any empirical analysis of top executives' compensation and incentive payments in Japan. Before engaging in empirical analysis, Chapter 8 discusses the composition and institutional framework of top executives' compensation and the adoption of board sub-committees in Taiwan.

Chapter 9 develops the hypotheses and provides details of the empirical data on this topic. Based on the prior literature, we include past firm performance, cash constraints, board composition, ownership structure, investment opportunities, and firm size as determinants and try to find out what factors affect the level and structure of top executives' compensation. The sample, data, derived variables, and estimation methodologies are also introduced in this chapter.

Chapter 10 presents the empirical results concerning top executives' compensation. These results indicate that, although the Taiwanese authorities have started to reform

corporate governance, grants of incentive payments to top executives are not always related to performance or to corporate governance, such as the ratio of outside directors. Moreover, given the argument that companies will choose across corporate governance mechanisms (Coles et al., 2000), the results in this thesis imply that non-GLCs in Taiwan may distribute share-based compensation to executives excessively because the distribution of share-based compensation to executives is not always negatively related to other corporate governance mechanisms. Therefore, the corporate governance influence in GLCs in Taiwan is not seen to be less efficient than in non-GLCs. The results also point to the need to reform the disclosure of top executives' share-based compensation and to provide a uniform calculation method for quantifying share-based compensation[2].

Finally, Chapter 11 summarises the arguments of all the preceding chapters, identifies applications and policy contributions of this thesis and points out possible directions for future research.

In brief, this thesis examines the relationships between the intervention of government and financial institutions and firm performance and DOI. Furthermore, the current institutional background and recent reforms of corporate governance in Japan and Taiwan are also discussed. The thesis breaks new ground by utilising SEM to examine political and financial intervention from the viewpoint of corporate governance in Japan and Taiwan. Furthermore, it also examines the relationship between top executives' compensation and the corporate governance mechanism in Taiwan, a theme that has been seldom investigated before. It is only due to the very recent improvement in the level of disclosure of corporate governance data in Japan and Taiwan that this analysis has been possible. Based on the findings presented above, the reform of corporate governance in Japan and Taiwan has further ground to cover.

[2] The Taiwanese government now intends to refer to Statement 123(R) in the US, which regulates that the cost of all employee share options and equity-based compensation should be reflected in the financial statements based on the estimated fair value of the awards.

Chapter Two
Political Involvement and Corporate Governance

2.1 Introduction

The operation of a successful company always involves many external and internal factors. In some countries, political involvement is the most obvious external factor. In relational capitalism (Raghuram and Zingales, 1998), most of the economy is operated subject to a grabbing hand which is controlled by the ruling political party (Shleifer and Vishny, 1998). The ruling party may afford better treatment to those companies that have the same political ideology as the ruling party and who are engaged in economic activities that are favoured by the government. In this kind of capitalism, it is of critical importance for managers and directors to develop a harmonious relationship with the government in order to get the subsidised resources. In addition, the government can also have the power to control the operation of some specific companies through the pattern of government ownership and government appointed directors and thereby can attempt to make a profit or to extract rents for the ruling party. This is especially true for government-linked financial institutions. The grabbing hand model in the work of Shleifer and Vishny (1998) indicates that that the government will pursue its own interests at the expense of the taxpayers and shareholders, thereby reducing the effectiveness of the monitoring system of a company.

In relational capitalism, the rules established by the government, such as entry barriers, regulations, subsidies, and taxes, also strongly affect company strategies and firm performance. So a company will attempt variously to lobby and appoint retired bureaucrats to the board in order to build deeper relations with the government, for example, the system of *amakudari* in Japan (Van Rixtel and Hassink, 2002), In this way, the company may be able to enjoy some specific advantages in trade and bank borrowing as a payback from the government. Examples of such arrangements are

the business groups that dominate the Japanese, Korean and Taiwanese economies (*keiretsu*, *chaebol*, and family enterprise respectively). Nevertheless, overlooking the contribution that governments have made to the economic achievement of many Asian countries would be a mistake (Raghuram and Zingales, 1998).

Empirical analysis is used in this thesis to examine two dimensions – firm performance and the degree of internationalisation (DOI). First, we examine the relationship between firm performance and political involvement. We try to find the reason why governments and other financial institutions intervene in the operation of some companies. We also examine whether this kind of intervention jeopardises the monitoring ability of a board and subsequent firm performance. Second, we investigate the relationship between DOI and political involvement. Since the governments in many Asian countries support the international expansion of local companies, a significant relationship should exist between political involvement and the prior/subsequent DOI. In this thesis, we try to fill the gap left by quantitative empirical studies on this topic.

Although few papers study the relationship between political involvement and firm performance and DOI, there are many papers paying attention to political issues in macroeconomics, political economics and public finance. Scholars have discussed the topics of the unemployment rate, economic growth rate, congressional voting, and monetary policy. Poole and Rosenthal (1996) and Kalt and Zapan (1990) argue that political ideology significantly affects the legislator's voting behaviour; that is, a legislator may vote for a specific policy that conforms to the policy of his party. They conclude that a legislator's political ideology will affect his voting behaviour and thereby affect whether the government adopts a new policy. Lopéz and Ramírez (2000) conclude that a worsening of economic conditions (e.g. higher inflation rate or higher unemployment rate) causes the convergence of the political views of different parties. However, when the economic growth rate increases, the political views of different parties become highly distinct. They infer that political ideology is an endogenous factor. However, compared with macroeconomics and public finance studies, studies concerning the relationship among political involvement, the

corporate governance mechanism and firm performance are still rare.

Among these few studies concerning the relationship between political involvement and firm performance, Raghuram and Zingales (1998) argue that stock market capitalism, although not necessarily better than relational capitalism, has a much lower chance of causing systematic financial crisis in the short term. Agrawal and Knoeber (2001) is the pioneering study, which takes political involvement into consideration in corporate governance mechanism studies. They examine the political roles of outside directors and find that when politics is more important for a company, there is a greater number of directors with political and legal experience in that company. In addition, they also conclude that politically experienced directors are more important when the government acts as an ally because cooperating with the government is more important. Conversely, legally experienced directors are more important when the government acts as an adversary because, in this situation, negotiating or standing up to the government is more important. In addition to corporate governance and firm performance, Santa-Clara and Valkanov (2003) also claim that political ideology will influence the value-weighted excess return in the stock market in the US. There are also several studies that have examined the relationship between Japanese bank performance and the system of *amakudari*, for example, Van Rixtel and Hassink (2002) and Horiuchi and Shimizu (2001). Most studies conclude that the system of *amakudari* enables banks to expand risk-taking activities and thereby sabotages the monitoring system. According to these papers, it seems that political involvement greatly affects the corporate governance mechanism and firm performance.

In order to strengthen the effectiveness of policy implementation and to pave the way for winning the next election, government representatives who sit on boards would have to be replaced if the ruling party changes, thus ensuring that these companies follow the policies favoured by the new ruling party . In addition to the system of *amakudari* in Japan, Ma and Yu (2003) examine the power-shift in Taiwan and find that there is a significant relationship between the policy control consideration and the turnover rate of directors. That is, the percentage change of board members after

the power-shift is significantly higher for policy-sensitive companies that are highly regulated or instrumental to policy implementation, such as the banking, energy, transportation, and telecommunications industries.

According to the literature, there is reason to believe that political involvement affects corporate governance and firm performance. However, the existing literature is limited to the system of *amakudari* in the Japanese banking industry. We attempt to investigate the relationship among political involvement, corporate governance, and firm performance and the relationship among political involvement, corporate governance, and DOI in Japan and Taiwan. Before discussing the sample and the models used in this thesis, we will introduce the background of political involvement and corporate governance in Japan and Taiwan. Section 2.2 will discuss political involvement and corporate governance in Japan and Section 2.3 will discuss political involvement and corporate governance in Taiwan. The conclusion is presented in Section 2.4.

2.2 Political Involvement and Corporate Governance in Japan

2.2.1 Informal Networks in Japan: *Amakudari* and *Gakubatsu*

The most notable feature of the Japanese corporate governance mechanism is serious political involvement, which is dominated by the Japanese Ministry of Finance (MoF) and Bank of Japan (BoJ). The MoF, BoJ, and other subsidiary organisations not only supervise financial activities in Japan but also maintain strong regulatory control of all Japanese companies (Van Rixtel, 2002; Monks and Minow, 2004). The most well known informal network in Japan is '*amakudari*', which is discussed by numerous studies (Johnson, 1974; Inoki, 1993; Van Rixtel, 2002; Van Rixtel and Hassink, 2002; Horiuchi and Shimizu, 2001; Carpenter, 2003; Schaede, 1994, 1995; Yamori, 1998; Colignon and Usui, 2003).

Before discussing *amakudari* in Japan, it is necessary to first introduce the concept of

'*gakubatsu*'. This is a school-based clique, which is a personal network based on academic background (Ursacki, 1994; Schaede, 1995; Van Rixtel, 2002). In Japan, bureaucrats have long been recognised to hold a common orientation based on education and training; they have attended the same universities and share similar work experience. Top-level bureaucrats have a similarity of experience and education that produces a very exclusive environment and a special elite culture, which is very hard for other people who do not share the same experience to enter. *Gakubatsu* "...is based on a strong feeling of group consciousness, resulting from sharing the experience, and status of the same university. This strong consciousness of one's academic background establishes a mutual support system both within and between Japanese organisations" (Van Rixtel, 2002, p.65). The most famous *gakubatsu* come from the five most prestigious universities (the so-called 'Big Five'). The best of which is the University of Tokyo (Todai). The other four include two public universities, the Waseda University and the Keio University, and two private, the University of Kyoto and the Hitotsubashi University.

Japanese education is extremely competitive. If you pass the university entrance examination and enter one of the 'Big Five', you will be guaranteed a successful career. Colignon and Usui (2003, p.32) claim that the process of entering top universities and then going into government is to "...contribute to the public's perception of them as a legitimate elite based on merit." Todai is the most prestigious university (especially the Law School) and provides the main pathway to access the elite posts as top bureaucrats, diplomats, and ministers. Because of the centrally controlled education in Japan, the recruitment into the government is strongly biased toward Todai, even though Article 15 of the 1946 constitution requires public service to be open to all. For example, in 2003, among the 18 directors of the Bank of Japan (BoJ), 15 directors had graduated from Todai and one from the Hitotsubashi University.

In addition to supplying elites to the public sector, the 'Big Five' also build a public-private bridge between the government and private sector. Some of the graduates from the 'Big Five' may enter famous large 'blue-chip' companies. These

graduates will eventually gain the highest positions and will then facilitate communication with the government and establish an informal relationship with other 'Big Five' graduates in the public sector for the exchange of information, consultation and the co-ordination of policies. The significance of networks for university graduates in Japan is obvious. For example, in 2003, 42% of CEOs and 27% of directors graduated from the 'Big Five'[3]. Rebick (2000) also shows that almost 60% of employment in the private sector can be attributed to a number of specific faculties at certain universities. According to Ichiro (1994), all 37 administrative vice ministers of MoF between 1945 and 1995 graduated from the University of Tokyo. Out of the 26 administrative vice ministers of the Ministry of International Trade and Industry (MITI), only one did not graduate from the 'Big Five'.

Because of similar academic backgrounds, this connection between the public and private sectors may result in a "homogenisation of views" (Johnson, 1982, p.60-62). These graduates who share a similar educational background and work experience also share a similar orientation to government politics and policies (Colignon and Usui, 2003). Under this kind of homogeneity and the close relationship with education, it is very common to appoint a director or an employee with the political background of a certain public sector because they come from the same environment. It is very easy for managers who work in the private sector to say "...we need one officer from the government or come to work with us" (Colignon and Usui, 2003, p.34). Thus, there is always political involvement.

Because of the *gakubatsu*, the phenomenon of *amakudari* occurs. The system of *amakudari* is the post-retirement employment of government bureaucrats in public listed companies. The literal translation of *amakudari* is 'descent from heaven' and refers to the re-employment of top-level bureaucrats in high-level positions in private or public listed companies, for example, as presidents, directors, CEOs, and CFOs. These retired bureaucrats receive full compensation from their new companies in addition to their civil service pensions. This kind of re-employment will generate

[3] Source: *Yakuin Shikihou* (Employee Report), published by Tokyo Keizai Shinposha.

pervasive personal networks and alliances between many different elements of Japanese society, business, politics, and bureaucracy. When these former bureaucrats move to their new positions, they will bring with them their personal networks and invaluable knowledge concerning administrative procedures and the ministry's policies gained during their careers (Colignon and Usui, 2003; Van Rixtel, 2002). The system of *amakudari* provides a channel of sharing information and resources across legislative, bureaucratic and business institutions. With *amakudari*, a great deal of information transfers to those private and public listed companies that employ former bureaucrats. The system of *amakudari* can help these companies to maintain smooth relationships with the related ministries and public institutions that regulate, license, and subsidise their industry. Table 2-1 exhibits the scale of *amakudari* in Japan from 1979 to 2000.

Table 2-1 Amakudari on the boards of directors of the 100 largest public listed companies, Japan, 1979-2000

Year	Total number of directors (a)	Number of Firms with amakudari	Number of amakudari (b)	The ratio of amakudari (b/a) (%)
1979	2,715	35	35	1.29
1981	2,727	40	41	1.50
1983	2,965	39	50	1.69
1985	3,122	50	71	2.27
1987	3,217	62	68	2.11
1989	3,423	65	69	2.02
1991	3,605	67	85	2.36
1997	3,434	63	102	2.97
2000	2,852	58	94	3.30

Source: Colignon and Usui (2003, p.62, Table 3.3)

Amakudari has numerous different definitions. The most obvious difference is in the type of companies that try to employ retired bureaucrats. Some studies limit their definition to public listed companies and some to *amakudari* sources, such as the Ministry of Finance (MoF) and the Bank of Japan (BoJ) (Van Rixtel, 2002). In this thesis, the following definition is used.

"*Amakudari involves the movement of retired bureaucrats from the public sector to the boards of public listed companies.*"

In addition, the term '*shukko*' is a variation of *amakudari* (Carpenter, 2003). *Shukko* means "on loan to another company" (Carpenter, 2003, p.93). It is a temporary exchange of employees between the public and private sector (Miyamoto, 1995; Van Rixtel, 2002). The on-loan employees are assigned as regular staff of the receiving organisations or companies for one to three years (Van Rixtel, 2002; Carpenter, 2003). The *shukko* mechanism can happen between the government and the private sector, between companies, or between governmental institutions (Van Rixtel, 2002). In this thesis, we focus on the assignment from the government to public listed companies. These on-loan bureaucrats still have connection with their ministries but, at the same time, they are identified as officers of the public listed companies where they are assigned (Carpenter, 2003). According to Keehn's (1990, p.1032) discussion of the deployment of Japanese ministry directors in *shukko* positions, about 80% of all Japanese directors in ministries had previously held *shukko* positions in other organisations during their career. The benefits of *shukko* include better access to political information, improved understanding of administrative and bureaucratic rules and the establishment of informal networks with the government. Therefore, the *shukko* mechanism is a very important medium, which allows the government to intervene in the operation of a company. Based on the definition of *amakudari* above, we also consider the *shukko* mechanism to be a form of political involvement in this thesis.

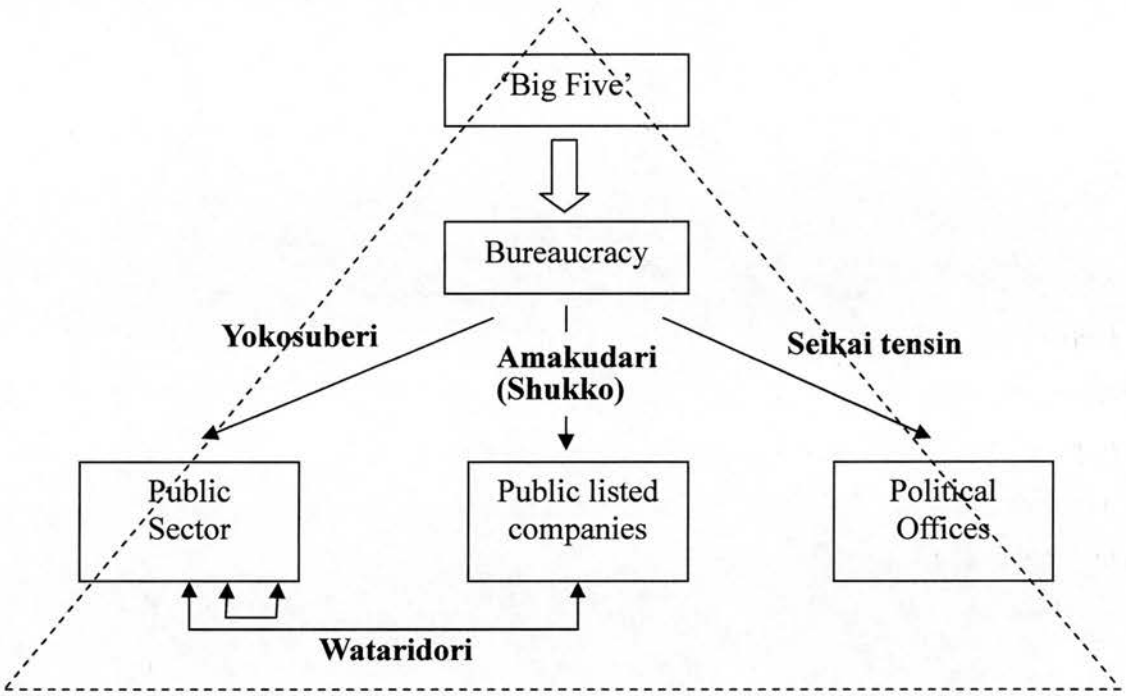
In a broad sense, political involvement in Japan includes three other different forms. The first form is '*yokosuberi*' (sideslip), which means the movement of retired bureaucrats from the bureaucracy to public organisations, non-profit organisations, and special legal corporations, such as the Tokyo Stock Exchange, Japan Airline, and the Tokyo Electric Power Company (Johnson, 1974; Schaede, 1995; Colignon and Usui, 2003). These public organisations provide an intermediate linkage between the government and public listed companies. Many public listed companies rely on the resources supplied by special legal corporations. These resources include contracts, subsidies, consultancy contracts, and loans. These public organisations, non-profit organisations, and special legal corporations also receive retired bureaucrats from the

government through the form of *yokosuberi*, which is less regulated and less visible than *amakudari*. Therefore, it is very common to have ex-bureaucrats in public organisations. For example, a government report published in the Japan Times on 22nd December, 2000 claimed that 538 top-level bureaucrats retired between August 1999 and August 2000. After three months, 90% (485 ex-bureaucrats) were employed and 53.4% (259 ex-bureaucrats) of these moved to government affiliates or related foundations as directors, auditors, or into high management positions. Another government report made by the Ministry of Public Management, Home Affairs, Posts and Telecommunications also indicates that in Japan, 33% of state-backed public organisations have directors, who were previously employed as civil servants (Financial Times, 30th July, 2004).

However, high-level retired bureaucrats that move out of ministries may look forward to two, three, or even more high-level positions in public organisations or public listed companies. Bureaucrats who have several positions in public and private sectors are called '*wataridori*' (the literal translation is migratory birds). The system of *wataridori* establishes a linkage between *yokosuberi* and the system of *amakudari*. *Wataridori* represents not only the direct relationship between bureaucracy and the first re-employment positions, but also the indirect relationship between bureaucracy and subsequent re-employment positions. Therefore, counting *amakudari* placements in the private sector and *yokosuberi* placements in the public sector alone may overlook the influence of political involvement from ex-bureaucrats who are employed by both public listed companies and special legal organisations. The literature on *wataridori,* however, is very sparse, partly because of the limited availability of data and partly because of the nature of *wataridori* (Johnson, 1978; Inoki, 1995; Colignon and Usui, 2003).

The last form of political involvement in Japan is '*Seikai Tensin*' (movement to political office), which represents the bureaucrats' movement into the political world, for example, by becoming candidates for election to the Diet or members of the Lower House. According to Colignon and Usui (2003, p.11), this path "...is usually open only to bureaucrats who served in choice national or regional posts suitable for

building general political support." The previous three forms refer to the movement of retired bureaucrats to public or private sector posts. In the larger political economy, Diet members enact legislation that facilitates or impedes the resource and personnel distribution in the economy. In other words, *Seikai Tensin* builds a complete network among bureaucratic, political and business elites and thereby produces an iron triangle (Colignon and Usui, 2003). For this reason, the broadest political involvement should consider *Seikai Tensin*. Figure 2-1 illustrates these different kinds of political involvement. Due to the difficulty of data collection, this thesis only regards *amakudari* and *shukko* as political involvement.



Source: Revised from Colignon and Usui (2003, p.12)

Figure 2-1 Political Involvement in Japan

There are a few studies that examine the relationship between Japanese bank performance and the system of *amakudari*. Van Rixtel and Hassink (2002) suppose that the system of *amakudari* could be helpful in exercising *ex-ante* and *ex-post* monitoring. In *ex-ante* monitoring, the system of *amakudari* could operate as a watchdog who takes precautions before a financial crisis happens. In *ex-post* monitoring, the system of *amakudari* is viewed as a 'trouble shooter' who can restore confidence among depositors and solve an acute financial crisis. Troubled banks may attempt to employ more retired bureaucrats from MoF (Ministry of Finance) and BoJ

(the Bank of Japan) because they can persuade the relevant regulators to allow them to take more loans and more investment risks in order to try to improve firm performance. According to their empirical results, there is a negative relationship between firm performance and the inflow of retired MoF and BoJ staff members. In this way, they argue that the system of *amakudari* is used as a trouble-shooter. Furthermore, there is a positive relationship between the amount of risky loans and the inflow of retired MoF and BoJ bureaucrats. That is, risky loans increase after these ex-bureaucrats are recruited, which implies that the purpose of *amakudari* is to buy influence from the government.

Horiuchi and Shimizu (2001) classify 125 regional banks into four categories which reflect different levels of utilisation of retired bureaucrats on the board. The empirical analysis of Japanese regional banks shows that those banks that accept ex-bureaucrats from MoF reduce the capital adequacy levels and increase the bad loan ratio. Their finding is similar to that of Van Rixtel and Hassink (2002). They conclude that the system of *amakudari* enables banks to expand risk-taking activities, and thereby sabotages the monitoring system. According to these papers, we can say that political involvement greatly affects the corporate governance mechanism and firm performance in Japan. Owing to the significant influence of political involvement concluded by prior literature, it is necessary to examine the relationship between political involvement, firm performance, corporate governance, and the strategy of a company in an empirical way.

2.2.2 External Governance: The Main Bank System and Cross-shareholding

As Japan rebuilt its economy after World War Two, it developed a unique corporate governance mechanism (Kang and Shivdasani, 1995; Monks and Minow, 2004). In addition to the notable political involvement, which is discussed in Section 2.2.1, the Japanese system is also famous for the form of 'relationship investing', known as *keiretsu* (Monks and Minow, 2004), and the main bank system (Monks and Minow,

2004; Aoki and Patrick, 1994). We first concentrate the pattern of cross-shareholding by affiliated companies (i.e. *keiretsu*) and the main bank system in this section. Board structure in Japan will be discussed in Section 2.2.3.

Different corporate governance mechanisms exist in different countries (Prowse, 1994; La Porta et al., 1996, 1999; Shleifer and Vishny, 1997)[4]. In the US and the UK, incentive payments to executives (Murphy, 1999; Core et. al., 2003), outside directors on the board, and the threat of external takeovers all provide incentives for executives to maximise the interests of shareholders (Kang and Shivadasani, 1995). In Japan, these mechanisms, which are widely adopted by countries in stock market capitalism, exist to a lesser extent (i.e. Prowse, 1992, 1994; Kang and Shivadasani, 1995; Shleifer ad Vishny, 1997; Morck and Nakamura, 1999; Ferris et al., 2001). For example, some shareholders in Japan, called stable shareholders, almost never sell the shares they hold and always support the management (Morck and Nakamura, 1999; Morck et al., 2000). A group of companies "linked by stable intercorporate shareholdings is called a *keiretsu*" (Morck and Nakamura, 1999, p.320). According to Kang and Shivdasani (1995), 49% of observations in their sample belong to a *keiretsu*. These stable shareholders form a barrier to takeovers. In fact, intercorporate ownership in Japan is developed to be a takeover barrier (Sheard, 1989, 1991, 1992).

The concept of *keiretsu* can be defined as "a group consisting of a bank (with its affiliated financial institutions of other kinds, such as an insurance company and a trust bank) and the companies for which it acts as the main bank (main supplier of funds)" (Odagiri, 1992, p.167)[5]. *Keiretsu* are famous for cross-shareholding and

[4] Please refer to La Porta et al. (1996, 1999) and Shleifer and Vishny (1997) for a discussion of international differences in corporate governance.

[5] The history of *keiretsu* can be traced back to World War Two. After 1945, the post-war occupation by the US forced the dissolution of the family-controlled corporate groups, called *zaibatsu,* which were the dominant conglomerates in Japanese business before the war (Hoshi and Kashyap, 2001; Morck and Nakamura, 1999). Mitsui, Mitsubishi, Sumitomo, and Yasuda were the four biggest *zaibatsu* that dominated the Japanese economy during the pre-war and wartime periods (Hoshi and Kashyap, 2001). Some other smaller groups, which formed at the end of the 1870s, such as Furukawa, Asano, Fujita, and Kawasaki, were also regarded as *zaibatsu* (Hoshi and Kashyap, 2001). Since Japanese companies were widely held by investors outside the *zaibatsu* after the reform, companies formerly in *zaibatsu* groups started to face the threat of takeovers (Morck and Nakamura, 1999). In order to protect companies, managers of former *zaibatsu* companies "set up cross-holding with the explicit aim of blocking potential hostile raids" (Morck and Nakamura, 1999, p.320). This coalescence of groups in English is now commonly identified by the Japanese word *keiretsu*.

intense information sharing among member companies (Van Rixtel, 2002). Member companies monitor each other (Van Rixtel, 2002; Morck and Nakamura, 1999) and managers are monitored by companies in the same group. These member companies and the main bank, which will be discussed later, construct a network of external governance in Japan.

The term *keiretsu* covers two kinds of network. One is the vertical *keiretsu*, which is a supply-chain with one dominant company, such as Toyota, Nissan, Hitachi, or Matsushita. The other is the horizontal *keiretsu*, which is composed of a group of peers. In the horizontal *keiretsu*, there is neither family control nor a dominant company that governs other companies. Since the prohibition of intercorporate ownership was withdrawn in 1949, Japanese companies started to buy each others' shares as "part of the recapitalisation process" (Hoshi and Kashyap, 2001, p.11) and as a barrier to hostile takeovers (Morck and Nakamura, 1999). This phenomenon is so-called cross-shareholding and thereby creates the horizontal *keiretsu*, which is different from a parent company holding shares in a subsidiary.

Cross-shareholding among *keiretsu* members is a device to entrench executives (Kaplan and Minton, 1994; Morck and Nakamura, 1999). Managers are monitored by other companies in the same group. Although this kind of external monitoring arises in Japanese *keiretsu*, studies on American conglomerates make this argument suspect (Lang and Stulz, 1994). Therefore, the main question concerning *keiretsu* is whether it distorts the strategies and jeopardises firm performance (Hoshi and Kashyap, 2001). Although this kind of alliance may provide external monitoring and generate extra profits, some researchers argue that these profits may be used to allow the members to undertake other activities that may not be profitable, while others suggest that the behaviour of *keiretsu* companies is no different from the behaviour of other companies (Lawrence, 1991; Weinstein and Yafeh, 1998; Kang and Shivdasani, 1995; Prowse, 1992; Morck and Nakamura, 1999; Hoshi and Kashyap, 2001). For example, Kang and Shivdasani (1995) report that *keiretsu* membership has no effect on the sensitivity of top executive turnover to either earning or share price performance. Based on the origin of *keiretsu*, we consider the

cross-shareholding among companies as one alternative corporate governance mechanism in this thesis.

In addition to *keiretsu*, the main bank system is another notable characteristic of Japanese governance mechanisms. *Keiretsu* are characterised by a complicated web of cross-shareholding among members centred around a main bank[6]. Kang and Shivdasani (1995) report that 18% of the companies in their sample are tied to a main bank. Aoki et al. (1994) define the term main bank system as follows.

"a system of corporate financing and governance involving an informal set of practices, institutional arrangements and behaviours among industrial and commercial firms, banks of various types, other financial institutions, and the regulatory authorities. At the core is the relationship between the main bank and the firm." (Aoki et al., 1994, p.3)

The influence from the main banks on companies includes the supply of resources and funds, the dispatch of directors, stable shareholding, the provision of financial services, and the underwriting of bond issues (Aoki et al., 1994). In other words, main banks in Japan play the role of shareholder and creditor simultaneously (Morck, Nakamura, Shivdasani, 2000). A bank holds a substantial shareholding in the companies to which it acts as the main bank. Before 1977, Japanese banks could not hold more than 10% of the outstanding shares of a company. Due to the excessive control of the banks, the Japanese Anti-Monopoly Act in 1977 made the restriction that banks cannot hold more than 5% of a company's outstanding equity and insurance companies cannot hold more than 10%. The Act provided a 10-year period (until April, 1987) for institutions to achieve this requirement[7]. The bank, therefore, is usually one of the top five shareholders of the company and the top shareholder among other banks (Aoki et al., 1994). Sheard (1989, p.402) reports that the main

[6] In Japan, the major depository institutions are the commercial banks and ordinary banks, whose activities are regulated under the Banking Law of 1927 (a new edition was promulgated in 1981 and implemented in 1982). The commercial banks are composed of city banks, regional banks, and mutual banks (Hoshi and Kashyap, 2001; van Rixtel, 2002). The city banks are the largest of all commercial banks. Most city banks are the main bank of a *keiretsu* (van Rixtel, 2002).

[7] Before 1987, the limit of bank ownership of an individual company was 10%.

bank was one of the top five shareholders in 72% of observations for companies listed on the first section of the Tokyo Stock Exchange (TSE) in 1980, and there was only 11% of observations whose main banks were not within the top 20 shareholders. The concentrated shareholdings provide Japanese banks with the incentives to monitor firm performance and future direction, and the right to intervene in the board of directors (Aoki, 1990; Aoki et al., 1994; Sheard, 1989; Kang and Shivdasani, 1995; Hoshi et al., 1990; Kaplan and Minton, 1994; Morck and Nakamura, 1999; Abe et al., 2005). Prowse (1990) concludes that large ownership of Japanese financial institutions affects companies' investment decisions and reduces agency costs.

Many prior studies suggest that main banks in Japan perform a role as monitor and also as financial supporter. For example, Aoki et al. (1990), Kaplan and Minton (1994), Kaplan (1994a), and Morck and Shivdasani (1999) find that banks are more likely to intervene in the operation of companies and appoint directors to companies with financial problems. Kang and Shivdasani (1995) document that companies with ties to a main bank are more likely to replace top executives for poor performance than companies without such ties. In case of financial distress, the main banks will play the role of "a guarantor for other creditors, reducing the cost related to the restructuring of the client firm" (Hiraki et al., 2003, p.241). All these studies support the argument that the main banks are likely to enhance firm value for companies that have ties with the main banks.

However, due to the Japanese banks' dual role as creditor and shareholder (Prowse, 1990, 1992; Sheard, 1994; Morck and Nakamura, 1999), some prior studies claim that large ownership of the main banks may give them considerable power to influence corporate governance without "significantly aligning their interests with those of shareholders" (Morck, Nakamura, and Shivdasani, 2000, p.539) and may constrain their incentives to maximise shareholders' interests. Although some studies, which are discussed in the previous paragraph (i.e. Kaplan and Minton, 1994), conclude that bank-appointed directors follow poor performance and result in a higher executive turnover rate, Morck and Nakamura (1999) doubt the interpretation which regards banks as *ex-post* monitors. Morck and Nakamura (1999) claim that

Japanese banks have used their lobbying power to advance their own interests. The replacement of some executives when liquidity problems occur does not indicate an effective monitoring role for the banks. Hiraki et al. (2003) also agree with this view that the main banks extract surplus from client companies. Meanwhile, Weinstein and Yafeh (1998) indicate that main bank clients did not exhibit high profitability or grow faster than their industry peers even though they have superior access to capital resources. Furthermore, Hoshi et al. (1990) also find that poor financial performance of client companies will result in bailouts from banks. Meanwhile, banks will also accept disproportionate responsibility for bad debts. Therefore, these arguments illustrate that main banks in Japan may play an insurance role, which may not maximise firm value, rather than a monitoring role (Morck and Nakamura, 1999). Based on the importance of bank-appointed directors and the intervention of banks, we include variables to measure the level of bank intervention in this thesis.

From the introduction above, we can conclude that the corporate governance mechanism in Japan is widely considered to be bank-oriented. Much less is known regarding alternative corporate governance mechanisms in Japan (Kang and Shivdasani, 1999). Nevertheless, such alternative mechanisms still provide the monitoring function. Kang and Shivdasani (1999) find that companies which do not affiliate with banks display significantly higher levels of managerial ownership, higher levels of bank ownership by bank blockholders, smaller boards, and better firm performance. Hiraki et al. (2003) also report that one-way intercorporate shareholdings[8] are positively related to firm value, but cross-shareholdings tend to be negatively related to firm value. These results suggest alternative governance mechanisms may substitute for bank-based monitoring in Japan. Therefore, in addition to bank-oriented variables, we also include variables to measure other alternative governance mechanisms in Japan, such as blockholder ownership and cross-shareholding ownership.

[8] Hiraki et al. (2003) suggest that there are two types of intercorporate shareholdings. The first type is cross-shareholdings in which participating companies hold each other's share. The second type is one-way shareholdings in which company A holds the shares of company B, but company B does not hold any shares of company A.

2.2.3 Internal Governance: Board Structure

Based on the introduction in Section 2.2.2, we can conclude that concentrated ownership in Japanese companies is very high. Financial institutions are the most important large shareholders of a company (Prowse, 1992). The unique mechanisms – *keiretsu* and the main bank – also influence board structure in Japan, where corporate priorities focus on promoting the interests of the company and its employees rather than on the shareholders (Monks and Minow, 2004). In this section, we will focus on the characteristics of the board of directors in Japan.

First, however, we will introduce the relevant laws and codes concerning Japanese corporate governance. In May 1998, the Japan Corporate Governance Forum (JCGF) issued one code, which recommended that Japanese companies should have more outside directors and independent committees. In October 2001, the Japan Corporate Governance Forum (JCGF) revised this code. This new code covers similar concepts but outlines its principles in more detail. It raises the issue concerning transparent disclosure and brings much greater clarity to board committees. Afterwards, in 2001, the Japanese government amended its Corporation Law and Commercial Code to strengthen the independence of statutory auditors, who are traditionally appointed by shareholders and are responsible for supervising directors. In 2002, Japan amended its Corporation Law and Commercial Code again to introduce the 'committee system'. Companies can choose to use the traditional statutory auditor system, which will be discussed below, or to adopt the committee system, which includes independent directors, three board committees (audit, remuneration and nomination committees), and chief executive officers. The new rules were implemented on April 1st, 2003.

From the code and the revision, we can observe that board structure in Japan is different from board structure in most western countries, such as the US and the UK The corporate governance in Japan, however, is similar to that in Germany (Mallin, 2004) in that banks and supervisory boards play an important role in both countries[9].

[9] Compared to the German system, there is no "automatic provision for employees to sit on the

In Japan, the directors are elected at shareholder meetings, which are held annually. At an annual general meeting (AGM), which is called by the directors of a company[10], shareholders have the right to vote for directors and statutory auditors, to decide dividend payments and to act on other matters, such as management proposals. The AGM is called within three months from the end of the fiscal accounting year of the listed companies. An extraordinary general meeting (EGM) may be convened whenever necessary[11]. However, only shareholders having 3% or more of the total voting rights of all shareholders continuously for at least the preceding six months can demand the convocation of an EGM by submitting to the directors a paper document describing the proposed agenda[12].

The top management team members in Japanese companies may include a chairman (sometimes a deputy chairman), a president, executive directors, managing directors, directors, advisory directors, and statutory auditors (Van Rixtel, 2002). A company requires a minimum of three directors with at least one of them being nominated to the position of representative director[13]. A director is appointed by the shareholders at the AGM for a maximum of two years[14]. The chairman's main tasks are to advise the president, to manage public relations, and to take care of the selection of top executives (Schaede, 1992, p.28). The chairman is usually regarded as powerless and does not have significant influence (Van Rixtel, 2002). The most important director is usually the president. The president in Japanese companies is similar to the CEO in western companies (Kaplan and Minton, 1994). Nevertheless, Kaplan and Minton (1994) argue that, in some cases, the chairman may have greater power. Van Rixtel (2002, p.259) also points out that the chairman is "well informed about the strategic decisions". Hence, in this thesis, we still consider the chairman as a board member. Meanwhile, the president, the deputy-president, the executive directors, and the managing directors constitute the so-called *jōmukai* (executive committee), which is responsible for the most important decisions (Wiersema and Bird, 1993; Van Rixtel,

---

supervisory boards" in the Japanese system (Mallin, 2004, p.175).

[10] Commercial Code, Article 231.

[11] Commercial Code, Article 235.

[12] Commercial Code, Article 237(1).

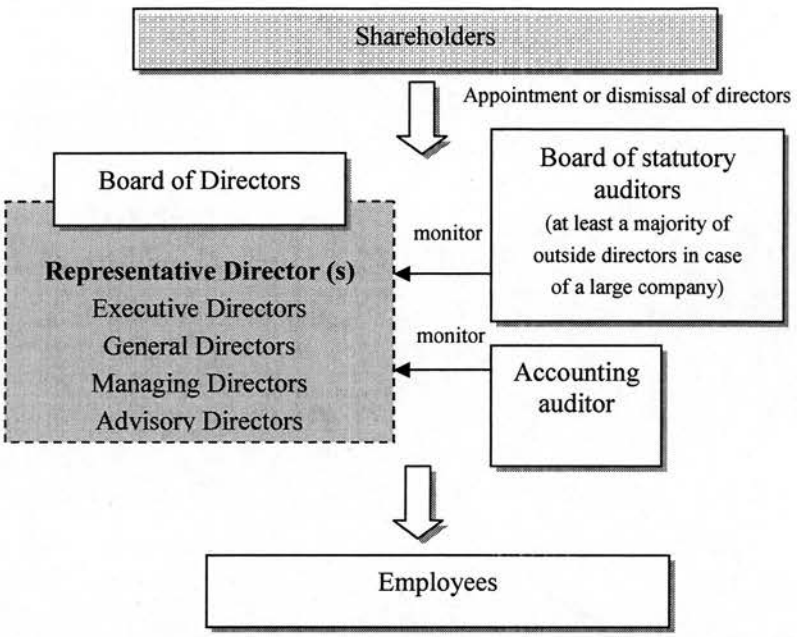
[13] Commercial Code, Article 255 and Article 256

[14] Commercial Code, Article 254

2002). In Wiersema and Bird's (1993) study, most *jōmukai* comprise an average of 5.6 members.

In addition to directors, there are several statutory auditors on Japanese boards. Most Japanese companies adopt the statutory auditor system. According to the Commercial Code in Japan, Japanese companies are required to have statutory auditors (called *kansa yaku*) and a board of statutory auditors (Cooke and Sawa, 1998). In 2002, the Diet made an amendment to the Commercial Code whereby a committee system was introduced as an alternative to the traditional statutory auditor system of corporate governance. Figure 2-2 is the comparison between the committee system and the traditional statutory auditor system.

A. The traditional statutory auditor system



B. The committee system

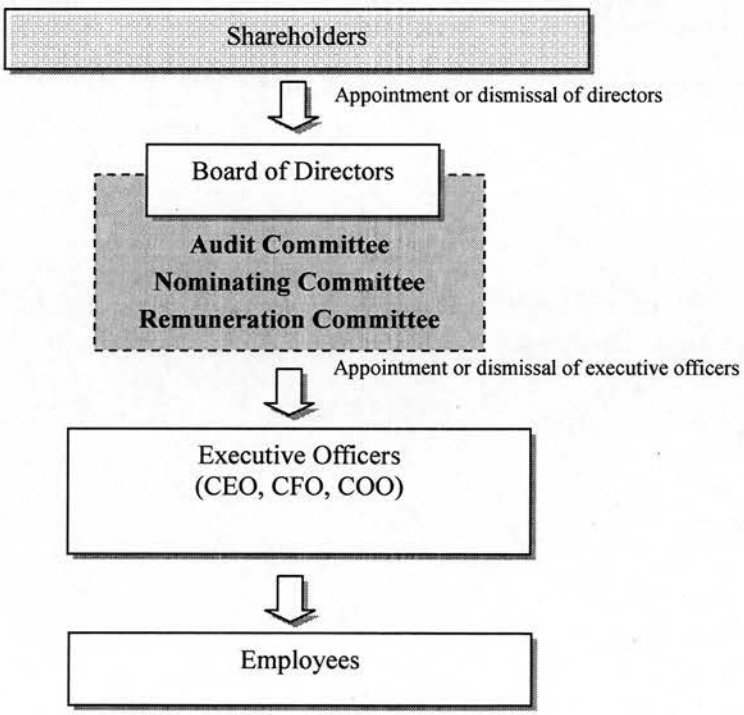


Figure 2-2 The old and new corporate governance systems in Japan

The principal duty of auditors and the board of auditors are as follows:

Principal Powers of Statutory Auditors:

1. Duty to attend and state opinions at board of directors' meetings (Commercial Code, Article 260-3 (1))
2. Authority to request the convening of or to convene a board of directors' meeting (Commercial Code, Article 260-3 (3,4))
3. Authority to request business reports and authority to examine business and financial conditions (Commercial Code Article, 274 (2))
4. Authority to examine subsidiaries (Commercial Code Article 274-3)
5. Authority to request the suspension of illegal activities (Commercial Code, Article 275-2)
6. Right to represent the company in lawsuits between directors and the company (Commercial Code, Article 275-4)

Principal Powers of the Board of Statutory Auditors:

1. Right to consent to or to propose the election of an auditor (Law on Exceptions to the Commercial Code, Article 18 (3))
2. Authority to elect or dismiss an external financial auditor (Law on Exceptions to the Commercial Code, Article 3 (2,3), Article5-2 (3), Article6 (3), and Article 6-2 (1))

Source: Japan Corporate Auditors Association (JCAA)[15].

Previously, the relevant Act had stated that a person could be appointed as an outside statutory auditor even if he/she had previously been a director, an executive officer or an employee of the same corporation or one of its subsidiaries, provided that five years had elapsed since that period of employment. Therefore, the independence of statutory auditors is doubtful (Cooke and Sawa, 1998). In 2001, an amendment was made to the Japanese Commercial Code and statutory auditors were given a more

[15] For more discussion regarding the powers of auditors, please refer to http://www.kansa.or.jp/english/frameset-about01.html.

independent and important role within their companies. After 2001, the statutory auditor system became more strict in large companies. A large company is defined in the statute as a joint-stock company, whose legal capital exceeds ¥500 million or whose total balance-sheet liabilities exceed ¥20 billion[16,17]. The new Commercial Code stated that a person who had previously been a director, an executive officer or an employee of the same corporation or one of its subsidiaries, may never become an outside director. From 1st May, 2005, there must be at least three auditors and at least half of the auditors must be outside auditors[18]. A board of statutory auditors should also be formed. The board of statutory auditors of a Japanese company is functionally similar to the audit committee on an American board. However, the board of auditors must be a separate body from the board of directors. The auditors cannot serve as a director or an employee of the company or its subsidiaries concurrently[19,20].

In addition to statutory auditors, another characteristic of Japanese boards of directors is that the board is mainly composed of insiders (Aoki, Patrick, Sheard, 1994). According to Aoki, Patrick, and Sheard (1994), incumbent managers include two kinds of employees. The first kind is insiders, so-called life-time employees who have risen to top management positions through internal promotion. The second kind is outsiders who are ex-bureaucrats or ex-employees of other organisations, such as banks and affiliated companies. Although directors and auditors are responsible for monitoring executives in Japan, they lack independence because the president normally selects his successor and has the final authority to decide the appointment of directors and statutory auditors owing to the culture of life-time employment (Cooke and Sawa, 1998; Kaplan and Minton, 1994). Therefore, unlike most

---

[16] "Law Related to Special Exceptions to the Commercial Code Concerning Audits, etc. of Joint Stock Corporations", Article 1-2

[17] The amendment of the Commercial Code made in May 2002 (the "May 2002 amendment") introduced the concept of "deemed large company". A company is a deemed large company under the Code if it has issued share capital of more the ¥100 million.

[18] "Law Related to Special Exceptions to the Commercial Code Concerning Audits, etc. of Joint Stock Corporations", Article 18

[19] "Law Related to Special Exceptions to the Commercial Code Concerning Audits, etc. of Joint Stock Corporations", Article 18 (4)

[20] If a person had previously been a director or an employee of the company or its subsidiaries, he/she can still serve as a statutory auditor in the company after retirement. However, he/she would not be regarded as an outside statutory auditor.

companies in the US and the UK, before the amendment was made to the Commercial Code in 2001, most Japanese boards were dominated by inside directors (Kang and Shivdasani, 1995). In Kaplan (1994a), 58.8% of the sample companies had no outside director. In Kang and Shivdasani (1995), a Japanese board usually had, on average, less than one outside director (0.72). Furthermore, according to a survey published by the Japan Corporate Auditors Association (JCAA) in 1996, over 50% of companies with representation in JCAA had outside auditors coming from parent companies, other affiliated companies, and their main banks.

According to the Commercial Code in Japan, Japanese companies are required to have statutory auditors and a board of statutory auditors (Cooke and Sawa, 1998). Albeit that the independence of statutory auditors is low in Japan, we still include auditors as members of the board of directors. Furthermore, although the observed frequency of outside directors is low in Japan (Kaplan, 1994; Kaplan and Minton, 1994; Kang and Shivdasani, 1995), the influence of outside directors is not insignificant. For example, Kaplan and Minton (1994) find that poor firm performance is negatively related to the subsequent appointments of outside directors. Morck and Nakamura (1999) also find that poor share performance will raise the possibility of an outside bank representative being appointed to the board. This finding infers that outside directors are still regarded as a source of external monitoring in Japan. Therefore, in this thesis, we also include the ratio of outside directors in Japanese models.

Since Japan and Taiwan share differences and similarities on political involvement and corporate governance, the following section will introduce political involvement and corporate governance in Taiwan.

2.3 Political Involvement and Corporate Governance in Taiwan

2.3.1 Business-Government Relations in Taiwan

Political involvement in Taiwan is significant but implicit. The origin of the business-government relations can be traced back to the political interests of the ruling party, the Kuo-Min-Tang (KMT) (Haggard, 2000). The KMT was the ruling party for fifty years in Taiwan. Following the establishment of the People's Republic of China (PRC) in 1949, the KMT has remained active in Taiwan up to the present time. In 1950, the KMT declared martial law in Taiwan and halted some democratic processes, including Presidential and Parliamentary elections. Until the 1970s, the KMT successfully developed the economy and created the admirable 'Taiwan economic miracle' (Tien, 1992). However, the KMT controlled the government under a one-party authoritarian state until the reforms in the late 1970s through to the 1990s. In the 1970s, the KMT began to allow for supplemental elections in Taiwan to fill the seats of the aging representatives in the parliament. Although opposition parties were not permitted, representatives who did not belong to the KMT were tolerated. In the 1980s, the KMT focused on transforming the government from a single-party system to a multi-party democracy. With the founding of the Democratic Progressive Party (DPP) in 1986, the KMT started competing against the DPP in Parliamentary elections. In 1991, martial law was lifted. All parties were allowed to compete in all levels of elections, including the Presidential election (Roy, 2003)[21].

As the ruling party in Taiwan for fifty years, the KMT amassed a vast business empire and operated state-owned companies in almost every industry, including the banking and insurance industry, the steel industry, the cement industry, the petrochemical industry, the ceramic industry, and television and radio stations. The characteristics of these state-owned companies are similar to the special corporations (*tokushu hojin*) in Japan[22], which are supported by public funding from the

[21] The history of the KMT is based on its official website: http://www.kmt.org.tw/

[22] The establishment of special corporations (*tokushu hojin*) in Japan was based on a special law, the Law Establishment Act, Article 4-11 subject to the Ministry of General Affairs (renamed as the Ministry of Public Management, Home Affairs, Posts and Telecommunication, MPHPT , in 2001 and

state-owned banks and annual government budget (Carpenter, 2003). During that period, these state-owned enterprises were more like party-owned enterprises, which made the KMT the richest political party in East Asia[23]. The KMT's long-term holding of political power, however, also brought corruption, vote buying, and plutocracy (Kang, 2002).

With the founding of the Democratic Progressive Party (DPP) in 1986 and the lifting of martial law in 1991, the ruling party had strong incentives to utilise business groups for political and financial support (Chu, 1994). This tendency was reinforced by the elections (Haggard, 2000; Haggard and McCubbins, 2000). Elections in Taiwan created strong incentives for politicians (i.e. candidates) to pursue personal votes which could be gained by campaign contributions and business supports. This phenomenon in Taiwan is similar to the phenomenon in Japan. In both countries, the single non-transferable vote system[24] enables parties to use public construction projects to assist individual candidates in solidifying his/her personal support base (Haggard, 2000; Haggard and McCubbins, 2000). In this kind of environment, business groups may utilise the opportunity of giving support to a party to cement their informal relationship with the government and to guarantee their interests in the future.

In this situation, people regard political involvement as natural. Compared to western countries, the percentage of government ownership in listed companies is very high in Taiwan. According to our calculation, by 31st December, 2004, the average ratio of government ownership to total outstanding listed shares was 2.21%, and the market-value-weighted government ownership amounted to 12.34%[25]. Through shares and corporate bonds, the KMT regime economically allied itself with enterprises and the mass investors for decades (Lee, 2004; Hsu, 2002). For example, the National Financial Stabilization Fund (NFSF) was established in 2000. According

---

renamed again as Ministry of Internal Affairs and Communications, MIC, in 2004.) (Carpenter, 2003).

[23] "Taiwan's Kuomintang On the brink", *Economist*, 6th December, 2001.

[24] The single non-transferable vote system (SNTV) means that many legislators are elected from the same district but each voter can only cast one ballot. Moreover, the votes of one candidate cannot be transferred to another candidate of the same party.

[25] The market-value-weighted ratio for each industry = $\frac{\textit{the capitalisation of the industry}}{\textit{the total capitalisation of the market}}$

to the 'Statute for the Establishment and Administration of the National Financial Stabilization Fund', which was announced on 9th February, 2000, the NFSF was specially established to preserve stability in capital markets and other financial markets and guarantee national stability[26,27]. Since most investors in Taiwan are individuals[28], the KMT used the NFSF to boost the market temporarily during the election period (Lin and Roberts, 2001). The central bank in Taiwan, CBC[29], also extended its regulatory authority over the banking system (Cheng, 1993; Haggard, 2000). Loans from the state-owned banks "tended to flow primarily to state-owned firms and a handful of larger private enterprises with collateral in land" (Haggard, 2000, p.135). The government can utilise these banks to subsidise favourable companies and public construction projects, which can generate domestic votes.

The era of the KMT ended in March, 2000 when the Democratic Progressive Party (DPP) won the presidential election and ended the KMT's position as the ruling party in Taiwan for the first time. Although the ruling party changed, the business-government relationship still exists (Ma and Yu, 2003). In order to cement the government's power, a new network emerged. It is not unusual to observe a reshuffle of administrative positions in any country after a transition in the government. However, it is not so common to observe board restructuring in the

---

[26] "Statute for the Establishment and Administration of the National Financial Stabilization Fund", Article 1: The National Financial Stabilization Fund (the "Fund") is specially established and this Statute is adopted for purposes of responding to significant occurrences at home or abroad so as to preserve stability in capital markets and other financial markets and guarantee national stability.

[27] "Statute for the Establishment and Administration of the National Financial Stabilization Fund", Article 4: The total amount of the Fund's utilizable funds shall be NTD500 billion, which shall come from the following sources:

1. Borrowings from financial institutions, collateralized by stock held by the National Treasury in public and private enterprises; the ceiling on such borrowings shall be NTD200 billion;
2. Borrowings from the Postal Deposit system, Postal Life Insurance Fund, Labour Insurance Fund, Labour Pension Fund, and Civil Servant Pension Fund of funds that are available for investment in securities but have not yet been invested; the ceiling on such borrowings shall be NT$300 billion.
3. Other funding sources approved by the competent authority.

The types and quantities of stocks that may be furnished as collateral as provided in subparagraph 1 of the preceding article shall be proposed by the Ministry of Finance for approval by the competent authorities. The collateralization of such stocks shall not be subject to the restrictions in Article 7, paragraph 1, and Article 28 of the National Property Law.

Borrowings made by the fund pursuant to paragraph 1 shall not be subject to the restrictions in the Public Debts Law.

[28] For the discussion concerning ownership structure in Taiwanese companies, please refer to Section 2.3.2.

[29] The full name of the central bank in Taiwan is "Central Bank of China (CBC)".

private sector after a power-shift. According to Ma and Yu (2003), after the power-shift, about one third of the board members of 73 listed GLCs were re-elected within the first year after the presidential inauguration and, of these, 40% changed their chairman and 33% changed their CEOs. New CEOs or chairmen were often DPP members or people who had a good relationship with the new ruling party. Based on the history of the business-government relationship in Taiwan and board restructuring in the private sector after the power-shift, political involvement in Taiwan may be rent-extracting rather than profit-maximising.

Ma and Yu (2003) examine the power-shift in Taiwan. They build two main hypotheses – the control-driven hypothesis and the performance-driven hypothesis. The control-driven hypothesis suggests that the motivation of political involvement is to control companies for domestic votes and policy implementation. Conversely, the performance-driven hypothesis suggests that the motivation of political involvement is to improve firm performance. Ma and Yu (2002) find that there is a significant relationship between policy control considerations and the turnover rate of directors. That is, the percentage change in board members after the power-shift is significantly higher for policy-sensitive firms, which are highly regulated or instrumental to policy implementation, such as banking, energy, transportation and telecommunication industries. The subsequent firm performance, however, is not related to the turnover rate of directors. This finding rejects the performance-driven hypothesis. It indicates that the motivation behind this kind of board restructuring is control-driven rather than performance-driven.

From the company's viewpoint, in order to strengthen the business-government relationship and thereby obtain some advantages, companies in Taiwan also employ directors who have political backgrounds, such as former CBC bureaucrats and former executives of state-owned enterprises. This has similarities to the *amakudari* and *shukko* systems in Japan[30]. Because of the different ideologies between the two political parties, KMT and DPP, Taiwanese companies cannot avoid political involvement in order to guarantee profit in such a political environment. This

[30] For discussion concerning the *amakudari* system and the *shukko* system in Japan, please refer to 2.2.1.

provides us with a good opportunity to evaluate the effect of political involvement on corporate governance, firm performance and DOI in Taiwan, which has seldom been examined before (Hoesel, 1999; Smith, 2000). Why and how political involvement affects corporate governance, firm performance and DOI of Taiwanese companies are questions that need to be given more attention.

2.3.2 External Governance: Passive Institutional Investors

Unlike in Japan, where companies utilise financial institutions as a strong external governance mechanism, in other Asian countries, such as Taiwan and Hong Kong, family control is quite strong (Claessens and Fan, 2002). Recent literature shows that corporate governance in emerging Asian countries has been noticed by researchers (Claessens et al., 2000; Claessens and Fan, 2002; Joh, 2003; Yeh et al., 2001; Wiwattanakantang, 2001). Among companies in these emerging Asian countries, Taiwanese companies have been criticised for the lack of transparency in financial reports, weak institutional investors, and family control (Yeh et al., 2001, 2002; Solomon, 2003). In this section, we focus on the phenomenon of passive institutional investors in Taiwan. We will discuss board structure in Section 2.3.3. Appendix 1 summarises the institutional framework.

Small-sized and medium-sized enterprises (SMEs) are the major company styles in Taiwan (Chen, 1999). The directors in SMEs tend to be family-related, which means companies in Taiwan do not have significant numbers of outside directors who are not members of the founding family or affiliated companies (Yeh et al., 2001). Family control is a dominant characteristic in Taiwanese companies (Yeh et al., 2001; Solomon et al., 2003), which will be discussed in Section 2.3.3. The phenomenon of family control results in low institutional ownership in Taiwan (Yeh et al., 2001, 2002). In the US and the UK, independent directors, incentive payments and the threat of takeovers all provide incentives for managers to maximise the interests of shareholders, while companies in Japan and Germany utilise the relationship between banks and companies as strong external governance (Kaplan, 1994b). The role of

institutional investors in Taiwan is quite different from that in other countries. In Taiwan, individual investors are the major participants of the Taiwanese stock market. Conversely, institutional investors own only a minor portion. According to Table 2-3 below, in 2004, foreign institutional ownership was 10.9%; domestic institutional ownership was 11.6 percent, whereas domestic individual ownership was 75.9 percent. In the 1990s, the Taiwanese government started to set policies to increase institutional ownership (Yeh, et al., 2001). In 2000, the Ministry of Finance in Taiwan removed the limitation that foreign institutional ownership could not exceed 50% equity of a company. However, as shown in Table 2-3, institutional ownership remained limited. A large portion of individual investors will result in many noise traders[31], a sentimental market, and a high turnover rate in the market (De Long et al., 1990). Moreover, individual shareholders often waive their right to have a voice in shareholder meetings due to either their overly small shareholding or to less cohesiveness among individual shareholders.

Table 2-2 The type of investors and trading value ratio in Taiwan

Year	Domestic Institutional Investors	Foreign Institutional Investors	Domestic Individual Investors
1992	3.6	0.3	96.1
1993	5.4	0.5	94.1
1994	5.8	0.7	93.5
1995	6.7	1.4	91.9
1996	8.6	2.1	89.3
1997	7.6	1.7	90.7
1998	8.6	1.6	89.7
1999	9.4	2.4	88.2
2000	10.3	3.6	86.1
2001	9.7	5.9	84.4
2002	10.1	6.7	82.3
2003	11.5	9.4	77.8
2004	11.6	10.9	75.9
2005 / 01	12.9	16.4	67.8

* Source: Corporate governance in Taiwan, Securities and Future Institute, April, 2005, p. 8.

Owing to low institutional ownership, the empirical evidence on the roles of

[31] A noise trader is a share trader that does not have any specific information of the security. They don't trade on fundamentals, then they consistently buy high and sell low (De Long et al., 1990).

institutional investors in Asia is sparse (Claessens and Fan, 2002)[32]. Qi et al. (2000) use a sample of Chinese listed companies and find that performance is positively associated with ownership by legal persons (institutional or corporate investors) but negatively associated with state ownership. The argument that legal persons are better monitors than the state is supported by Sun and Tong (2002), who also use a sample of Chinese listed companies. Furthermore, significant political involvement also reduces the demand of external governance from institutional investors because "professionalism may reveal information that can jeopardize the firms' rent-seeking activities" (Claessens and Fan, 2002, p.82). Chen et al. (2003) report that 50% of the directors are appointed by state controlling shareholders after studying 621 Chinese companies that went public from 1993 to 2000. They present a negative relationship between the presence of bureaucrats and professionalism. The presence of bureaucrats results in fewer directors possessing experience in law, finance, or accounting. Given this finding, in countries with significant political involvement, such as Taiwan and China, the monitoring ability from institutional investors may be reduced.

In a similar way to that in Japan, the phenomenon of cross-shareholding also occurs in Taiwan. The Company Law in Taiwan, however, allows institutional or government shareholders to appoint representatives to the board as directors and supervisors concurrently to serve the same company[33,34]. This enables the controlling family to establish nominal investment companies as a vehicle of shareholding (Lee

---

[32] Some studies examine institutional ownership in India, such as Sarkar and Sarkar (2000) and Chhibber and Majumdar (1999). Since the culture and institutional framework in India are different from those in Pacific-Asian countries, this research does not discuss the issues concerning corporate governance in India.

[33] Supervisors in Taiwan are similar to statutory auditors in Japan. Section 2.3.3 will discuss the supervisor system in Taiwan.

[34] Company Law, Article 27: Where a government agency or a juristic person acts as a shareholder of a company, it may be elected as a director or supervisor of the company provided that it shall designate a natural person as its proxy to exercise, on its behalf, the duties of a shareholder.
Where a government agency or a juristic person acts as a shareholder of a company, its authorized representative may also be elected as a director or supervisor of the company; and if there is a plural number of such authorized representatives, each of them may be so elected.
Any of the authorized representatives of a company referred to in Paragraphs I and II of this Article may, owing to the change of his/her functional duties, be replaced by a person to be authorized by the company so as to fulfil the unexposed term of office of the predecessor.
Any restriction placed upon the power or authority of the authorized representatives set forth in Paragraph I and Paragraph II of this Article shall not be set up as a defence against any bona fide third party.

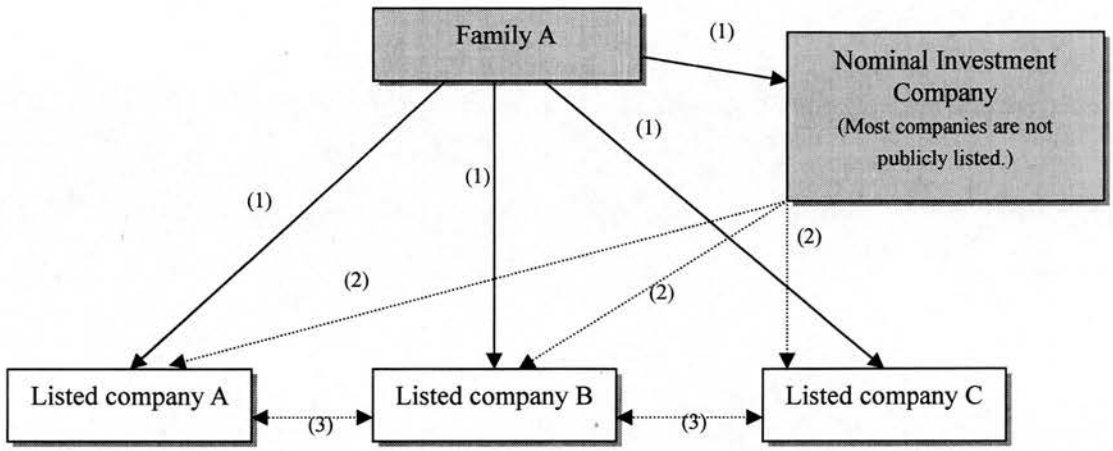
and Yeh, 2004). Some Taiwanese companies have established affiliated nominal investment companies, which are related to the controlling shareholders (Yeh et al., 2002). These nominal investment companies are used to create a cross-shareholding mechanism, which is different from the *keiretsu* in Japan in that there is no strong incentive for them to monitor the parent companies. Their controlling powers are strengthened through appointing family members to the board of directors and supervisors once the nominal investment companies or other legal entities are elected to dispatch representatives on the board. The affiliation between supervisors and control shareholders has weakened the function of supervisors. This law conflicts with the rule that a supervisor should not concurrently be a director of a company (Yeh, et al., 2002). Consequently, the external governance in most Taiwanese companies that are controlled by families has been neglected. Figure 2-3 shows the relationship between controlling family and nominal investment companies. The Taiwanese government is aware of the weak governance system in Taiwan, and is currently engaged in revising the relevant laws as discussed in Appendix 2.

In conclusion, compared to institutional investors in the US and the UK and the banks in Japan and Germany, the external governance in Taiwan is weak. Therefore, the monitoring function in Taiwan relies on boards of directors and the relevant regulations and laws. Although institutional investors and other external governance mechanisms are weak in Taiwan, they are far from ineffective. Gibson (2003) examines CEO turnover in eight emerging countries, including five Asian countries – India, Taiwan, Thailand, Malaysia, and South Korea – and finds CEOs are more likely to be replaced when firm performance is poor[35]. The influence of institutional investors is growing now due to the revision of relevant laws (Securities and Futures Institute, 2005)[36] and the high demand of capital in the Taiwanese electronics

[35] Gibson (2003) does not examine the relationship between the CEO turnover rate and firm performance for each country. This paper uses all the companies from eight emerging countries in the same regression.

[36] For example, due to the risk of cross-shareholding among affiliated companies, a subordinate company cannot redeem or buy back any share of the controlling company, nor accept any share under amended Company Law in 2001 (Company Law, Article 167). Moreover, in order to enhance the monitoring ability of the parent company to affiliated companies, the "Regulations for the Establishment of Internal Control Systems by Public listed companies" are amended twice in 2003 and 2004.

industry. Therefore, we include institutional ownership, bank representatives, and other variables concerning external governance in the Taiwanese models.



(1) appoint family members to the board
(2) appoint institutional representatives to the board
(3) cross-shareholding
direct control
indirect control

Source: Adapted from Table 3-3 and Table 3-4 in Yeh (2002, p. 91-92).

Figure 2-3 The relationship between the controlling family and nominal investment companies

2.3.3 Internal Governance: Family Control and Supervisors

Similar to that in Japan, internal governance in Taiwan is usually criticised as 'insider-oriented'. In Japan, these insiders are life-time employees who have risen to top management positions through internal promotion[37]. In Taiwan, these insiders originate from a structure based on family control and concentrated ownership (Franks and Myers, 1995; Solomon et al., 2003). In Asia, many companies are family owned and family controlled. Although these companies are listed on the stock market, they are directly or indirectly run by founding family members. Family control has hitherto received much attention in Asian corporate governance studies (Claessens et al., 2000a, 2000b; Bongini et al., 2001; Claessens and Fan, 2002; Yeh

[37] Please refer to Section 2.2.3 for the introduction of life-time employees.

et al., 2001, 2002)[38,39]. La Porta et al. (1999) examine the control structure of the largest 20 companies in 27 wealthy countries (including four Asian countries)[40] and find that the control of a company is usually held predominantly by a small number of owners in East Asia. La Porta et al. (1999, p.476) define a controlling shareholder (ultimate owner) as when "this shareholder's direct and indirect voting rights in the firm exceeds 20%." They also find that companies are more likely to be controlled by some controlling shareholders in countries with poor shareholder protection. Successive studies usually continue to use the concept of controlling shareholders, which is defined in La Porta et al. (1999), to observe the phenomenon of concentrated ownership in Asia. Subsequently, Claessens et al. (2000a) use a sample of 2980 publicly traded companies in nine East Asian countries[41] and report that 57.1% of companies have a CEO, a chairman, or a vice-chairman from the controlling family and 67.8% of companies have only one dominant controlling shareholder.

Shleifer and Vishny (1997) suggest that the benefits from concentrated ownership are larger in less developed counties. La Porta et al. (1999) substantiate this argument empirically. Since civil law countries are associated with weaker shareholder protection compared with common law countries (La Porta et al., 1997), Claessens and Fan (2002) point out that the weak legal systems and state enforcement in Asia explain why family-run companies have been the dominant corporation forms. On the other hand, Lins (2003, p.159) investigates 1433 companies in 18 emerging markets and reports that a "large non-management external shareholder can act as a partial substitute for missing institutional governance mechanisms". Based on these studies, most Taiwanese companies are family owned and family controlled because

---

[38] The discussions of family control in Asia usually exclude Japan in that its institutional features are somewhat different from those in the rest of Asia. For discussions of Japanese governance systems, please see Hoshi and Kashyap (2001) for a historical description of the Japanese governance system and Aoki and Patrick (1994) for the main bank system in Japan.

[39] For studies concerning controlling shareholders and family control in Europe, please refer to Faccio and Lang (2002).

[40] The four Asian countries include Hong Kong, Japan, South Korea, and Singapore. In addition to the four Asian countries, La Porta et al. (1999) also examine 23 other countries around the world.

[41] The nine counties include Japan, Taiwan, Hong Kong, South Korea, Singapore, Thailand, Malaysia, Philippines, and Indonesia.

of significant political involvement and the civil law system in Taiwan[42] (Solomon et al., 2003). According to Claessens et al. (2000a), 79.8% of Taiwanese companies have a CEO, a chairman, or a vice-chairman from the controlling family and 43.3% of companies have only one dominant controlling shareholder. By using 251 Taiwanese companies from 1997 to 1998, Yeh et al. (2002) focus on the family control in Taiwan and report that the controlling shareholder in Taiwan owns on average 30.3% of the equity. Moreover, the controlling shareholder concurrently holds the position of CEO or chairman in 47.8% of Taiwanese companies.

Claessens et al. (2000a) link concentration control with relational capitalism in East Asia. Concentration control in the hands of a few families creates incentives for these families to lobby government agencies and bureaucrats for preferential treatment, such as a better interest rate when borrowing money from state-owned banks and first choice of public contracts (Claessens et al., 2000a). In order to lobby government agencies, these families will try to build relationships with the government, for example, by employing retired bureaucrats. Finally, Claessens et al. (2000a) infer that the participation of bureaucrats in the control of the corporate sector certainly raises the likelihood of relational capitalism. Thus, the concentration control has suppressed the evolution of the legal system and institutional development[43]. For example, links between family shareholders and politicians have been spotlighted as a serious weakness in Taiwanese corporate governance and have hindered the reform (Solomon, et al. 2003).

Although family control is significant in East Asian countries, such as Indonesia, Malaysia, and Hong Kong, it is now gradually decreasing in Taiwan. In order to compete with foreign companies and raise money from the capital market (i.e. enhance the inflow of outside funds), some Taiwanese companies, especially companies in the electronics industry, have started to reform the phenomenon of family control by employing professional managers and outside directors (Solomon,

[42] The most famous families in Taiwan are Tainanbang group and the Formosa group. Please refer to Numazaki (1993) and Taniura (1989) for more discussion.

[43] These findings in Claessens et al. (2000) do not show the direction of causality. They imply that "the ability to lobby government could lead to further concentration of corporate control, thus creating a vicious circle of increased dependence of politicians and tycoons" (Claessens et al., 2000, p.109).

et al. 2003). In order to attract foreign institutional investors, it is necessary for Taiwanese companies that are controlled by families to share powers with outside shareholders. Hsu (1997) finds that family control through family members serving as executives and directors on the board has been gradually decreasing in Taiwan. Meanwhile, the incidence of professional managers serving as directors and executives is increasing. The recent reform of Company Law and relevant regulations and the establishment of the corporate governance code of practice in 2002 have also reduced family control. Therefore, in this thesis, we emphasise political involvement, which may be brought by family members because of relational capitalism (Claessens et al., 2000), and other external monitors, such as banks and other institutional investors.

According to La Porta et al. (1999) and Claessens et al. (2000), family control in Japan is less significant than other Asian countries. Except for family control, the corporate governance mechanisms in Taiwanese and Japanese companies are similar to that in German companies in the sense that all countries include supervisors (called statutory auditors in Japan) in boards of directors. Both Japanese and Taiwanese companies operate under a "two-tier board structure" (Filatotchev et al., 2005), with a board of directors and a supervisory board (called a board of statutory auditors in Japan), which is composed of some supervisors (called statutory auditors in Japan). In Taiwan, before 2002, a minimum of three directors was required[44]. After February 2002, according to the 'Taiwan Stock Exchange Corporation Regulations Governing Review of Securities Listings', a new company applying for listing on the Taiwan Stock Exchange Corporation (TSEC) requires a minimum of five directors. Moreover, the company should have at least two independent directors and one independent supervisor on the board[45]. In addition, at least one each of the elected

[44] Company Law, Article 192: The board of directors of a company shall have at least three directors who shall be elected by the shareholders' meeting from among the persons with disposing capacity.

[45] Taiwan Stock Exchange Corporation Regulations Governing Review of Securities Listings, Article 9: Notwithstanding the fact that an issuing company applying for the listing of its stock meets the listing criteria set forth in these Regulations, this Corporation may disagree to its listing if the issuing company has any of the events listed below..... Article 9(10): Where the company applying for listing has less than five members on its board of directors, or less than 2 independent directors; less than three supervisors, or less than one independent supervisor; or where within the past year the board of directors or supervisor(s) have been unable to independently exercise their functions. Additionally, the elected independent directors and independent supervisor(s) shall be confined to persons other than

independent supervisors should be a professional in accounting or finance. Before the amendment of Company Law in 2001, supervisors were elected from the shareholders. This Act, however, is only applicable to companies that are listed on the TSEC after 2002.

Supervisors (statutory auditors) are a unique characteristic of Taiwanese and Japanese boards. However, both Taiwanese and Japanese boards are different from boards that operate a truly two-tier model (Filatotchev et al., 2005). First, a German supervisory board (*Aufsichtsrat*) has the right to select and remove members of a management board (*Vorstand*) (Mallin, 2004; Filatotchev et al., 2005), whereas supervisors (statutory auditors) in Taiwan and Japan do not have the power to appoint or dismiss members of a board. Second, the two-tier model in Germany requires a compulsory employee representation. Companies which have more than 500 or 2,000 employees in Germany are also represented on the supervisory board, which is composed of one-third or one-half employee representatives respectively (Mallin, 2004). Furthermore, although both the Taiwanese and the Japanese supervisory system stems from the German supervisory system, the components of Taiwanese and Japanese supervisors (statutory auditors) are still different (Solomon et al., 2003). In Taiwan, owning to Article 27 in Company Law[46], the supervisors are sometimes "under the shadow of directors" (Solomon et al., 2003, p.239). The directors and supervisors usually come from the same family or the same institutional group, while the statutory auditors in Japan usually come from retired employees of the company, banks and other companies (Yeh, et al., 2002)[47].

The function of supervisors in Taiwan is similar to the function of audit committees in the United States (Securities and Futures Institute, 2005). Supervisors in Taiwan are designed to monitor the board of directors and solve conflicts among

---

juristic persons or representatives thereof set forth in Article 27 of the Company Act, and at least one of each shall be a professional in accounting or finance.

[46] The Company Law in Taiwan allows institutional or government shareholders to appoint their representatives as directors and supervisors at the same time.

[47] After 2005, the statutory auditor system is stricter in large companies. A large company is defined in the statute as a joint-stock company whose legal capital exceeds ¥500 million or total balance-sheet liabilities exceed ¥20 billion. For such large companies, there must be at least three auditors and at least half of the auditors must be outside auditors. Please see Section 2.2.3 and Appendix 1 for more discussion about statutory auditors in Japan.

shareholders, directors, and the company (Her, 1999; Solomon et al., 2003; Filatotchev et al., 2005). Thus, supervisors fulfill their duties by providing an independent and objective review concerning the financial reports, internal controls and the audit function. Supervisors in Taiwan can exercise their duties individually rather than passing through the board of supervisors[48], act on behalf of the company[49], and convene shareholder meetings[50]. The main individual duties exercised by supervisors include: (1) Supervisors should make a thorough investigation regarding the application of the company (§146 Company Law); (2) Supervisors can investigate the business and financial condition of the company at any time (§218 Company Law); (3) Supervisors should check and investigate all statements and records (§219 Company Law); (4) Supervisors should immediately notify the board to terminate improper business activities. (§218-2 Company Law); (5) Supervisors should verify the property when the company issues new shares (§274 Company Law[51]).

Since supervisors in Taiwan are responsible for monitoring directors and managers, independence is an important determinant to allow them to monitor effectively. Therefore, a supervisor cannot concurrently be a director or an employee of the company (§222 Company Law). Moreover, supervisors in public listed companies that are listed on the TSEC should include at least three members who do not have significant family or business relationships with directors[52]. In order to align the interests of directors and supervisors with the interests of shareholders, the Company Law in Taiwan, which was amended in 2001, requires the directors and supervisors

---

[48] Company Law, Article 221: Supervisors may each exercise the supervision power individually.

[49] The supervisor can act on behalf of the company, such as in case of a lawsuit between the company and a director (§213, §214 , §218 , §219 ,and §418 Company Law).

[50] When deemed necessary, a supervisor may convene a meeting of shareholders (§214 and §245 Company Law)

[51] Company Law, Article 274: Where a company issues new shares other than to the public, under the proviso to Article 272, it shall still be required to make the forms of subscription available as required by Paragraph I of the preceding Article.....After accepting property other than cash payment, the Board of Directors shall pass it on to the supervisor for inspection and comment, and shall report to the authority for approval.

[52] Relationships exist between (1) Spouse; (2) Lineal relations within the second degree of kinship; (3) Collateral relations within the third degree of kinship; (4) Representatives of the same juristic person; (5) Associated person (§9 (12), Taiwan Stock Exchange Corporation Criteria for Review of Securities Listings and §17, Supplementary Provisions to the Taiwan Stock Exchange Corporation Regulations for Review of Securities Listings).

of public listed companies to hold a certain amount of the company's shares and to disclose ownership information, including the change of the directors' and supervisors' shareholdings (§26 Securities and Exchange Act[53]). The mandatory equity ownership in Taiwan is different from the conditions not only in the UK and the US, but also in Japan (Filatotchev et al., 2005). Solomon et al. (2003) point out that it was generally accepted that only if directors and supervisors hold shares in the company will they protect the interests of shareholders.

Although Company Law in Taiwan prohibits the supervisors from concurrently being a director or an employee of the company and requires the directors and supervisors of public listed companies to hold the company's shares, the independence of supervisors is still in question (Yeh et al., 2002; Solomon et al., 2003). Company Law in Taiwan allows institutional or government shareholders to appoint their representatives as directors and supervisors to serve in the same company (§27(2) Company Law[54]). The affiliation between supervisors and major shareholders and the relationship between directors and supervisors has weakened the supervisors' monitoring functions because directors and supervisors are appointed by the same institutional or government shareholders (Yeh et al., 2002; Solomon et al., 2003). Article 27(2) in Company Law also strengthens family control and political involvement in Taiwan because powerful families and the government can increase their dominance within a company by establishing nominal investment companies to hold shares and appoint directors and supervisors to the board afterwards (Yeh et al., 2001, 2002). Figure 2-3 in page 42 depicts this situation.

---

[53] Securities and Exchange Act, Article 26: The total shares of nominal stocks held by the entire body of either directors or supervisors of an issuer shall not be less than a specified percentage of its total issued shares. The rules regulating the minimum percentage to be held by the directors and supervisors referred to in the preceding paragraph, and the examination of such holding shall be prescribed by an order from the Competent Authority.

[54] Company Law, Article 27: Where a government agency or a juristic person acts as a shareholder of a company, it may be elected as a director or supervisor of the company provided that it shall designate a natural person as its proxy to exercise, in its behalf, the duties of a shareholder.
Where a government agency or a juristic person acts as a shareholder of a company, its authorized representative may also be elected as a director or supervisor of the company; and if there is a plural number of such authorized representatives, each of them may be so elected.
Any of the authorized representatives of a company referred to in Paragraphs I and II of this Article may, owing to the change of his/her functional duties, be replaced by a person to be authorized by the company so as to fulfil the unexposed term of office of the predecessor.

Although the Taiwanese government has established many rules and laws to enhance the independence of boards[55], these rules are not implemented properly (Webb, 2006). For example, two outside directors in the China Development Financial Holding Corporation (SIC code: 2883) resigned their positions before the expiration of their terms on the board in 2006 because they saw family control of that company being so strong as to leave them powerless in terms of board decision-making[56]. Therefore, increasing the independence of supervisors and strengthening the implementation and enforcement of rules are the main tasks in the reform of Taiwanese corporate governance. On 11th January, 2006, the Taiwanese government revised the Securities and Exchange Act to reform corporate governance in Taiwan. This is the most comprehensive revision for 20 years. The new Act removes Article 27(2) in the old Securities and Exchange Act, which allows institutional or government shareholders to appoint their representatives as directors and supervisors to serve the same company concurrently. The new Securities and Exchange Act will be implemented on 1st January, 2007[57].

Since the independence of supervisors is questioned in Taiwan (Yeh et al., 2002; Solomon et al., 2003), the authorities have started to amend relevant laws to upgrade the quality of supervisors. Since 2002, according to the 'Taiwan Stock Exchange Corporation Criteria for Review of Securities Listings', every public company that applies for listing should have at least two independent directors and one independent supervisor. From March 22nd, 2002, the annual reports of listed companies should disclose whether their independent directors and independent supervisors have conformed to the independence guidelines in 'Taiwan Stock Exchange Corporation Criteria for Review of Securities Listings'. Appendix 2 summarises the institutional framework of corporate governance in Taiwan.

---

[55] Please refer to Appendix 2 for a summary of the institutional framework of corporate governance in Taiwan.

[56] The serial discussion can be obtained in *China Times*, B1, B2, 18th May, 2006; *China Times*, B2, 19th May, 2006; *China Times*, B2, 23rd May, 2006.

[57] Article 183, Securities and Exchange Act (amended on January 11th, 2006)

2.4 Conclusion

This chapter has provided the necessary context for the studies conducted in this thesis by introducing corporate governance in Japan and Taiwan. According to the discussions above, political involvement, such as *amakudari*, is significant in Japan and Taiwan. In Japan, the government appoints retired bureaucrats to the board to exercise the monitoring function. In Taiwan, the government also appoints representatives to the board. Due to the non-transferable vote system, which enables parties to use public construction projects to assist individual candidates, companies in both countries may utilise this opportunity to cement their informal relationship with the government. Therefore, political involvement plays an important role in corporate governance and company performance in Japan and Taiwan. Unfortunately, owing to the shortage of data, literature concerning the relationships between political involvement, corporate governance, firm performance, and DOI in Asia is sparse.

In addition to political involvement in corporate governance in Japan, the main bank in a *keiretsu* is also involved in the role of monitor and creditor. From the discussion in Section 2.2.2, it can be seen that corporate governance mechanisms in Japan are significantly linked with banks, as they are in Germany. The influence on companies from main banks includes the supply of resources and funds, the dispatch of directors, stable shareholding, the provision of financial services, and the underwriting of bond issues (Aoki et al., 1994). However, some studies claim that large ownership of the main banks may give them considerable power to influence corporate governance without "significantly aligning their interests with those of shareholders" (Morck, Nakamura and Shivdasani 2000, p.539) owing to the dual role of Japanese banks as creditor and shareholder. This may constrain their incentives to maximise the interests of shareholders.

Unlike Japan, internal governance in Taiwan is usually criticised as 'insider-oriented' owing to a structure based on family control. Yeh et al. (2002) focuses on the family control in Taiwan and reports that the controlling shareholder owns on average

30.3% equity. Moreover, the controlling shareholder concurrently holds the position of CEO or chairman in 47.8% of Taiwanese companies. Family control, however, is now gradually decreasing. Some Taiwanese companies, especially companies in the electronics industry, have started to reform the phenomenon of family control by employing professional managers and outside directors (Solomon, et al. 2003). In order to attract foreign institutional investors, it is necessary for Taiwanese companies that are controlled by families to share powers with outside shareholders.

According to the Commercial Code in Japan and the Company Law in Taiwan, Japanese and Taiwanese companies are required to have statutory auditors (called supervisors in Taiwan) and a board of statutory auditors (called a board of supervisors in Taiwan). The function of supervisors/auditors is similar to the function of audit committees in the US. Supervisors/auditors are designed to monitor the board of directors and resolve conflicts between shareholders, directors, and the company. However, the independence of supervisors/auditors in Japan and Taiwan is weak owning to defective laws. Therefore, the authorities in Japan and Taiwan have started to amend the relevant laws to upgrade the quality of supervisors.

Claessens and Fan (2002) indicate that two issues are still unknown in corporate governance. The first issue is "how alternative governance mechanisms improve corporate governance, such as foreign institutional investors and incentive payments." Although the Japanese corporate governance issues are widely discussed, less is known about these and the phenomenon of relational capitalism in other Asian countries. Therefore, based on the discussions in this chapter, we try in this thesis to examine political involvement in Japan and Taiwan by considering the influence of banks, institutional investors, blockholders, and the board of directors. The second issue mentioned by Claessens and Fan (2002) is how ownership structure affects not only firm performance and firm value but also other dimensions such as investment patterns In this thesis, we try to fill the gap within literature by examining the relationship between DOI, political involvement, the intervention of financial institutions, and the board of directors in Japan and Taiwan. The main focus of the next chapter is on the characteristics of internationalisation in Asian countries. It also

reviews the measurement of DOI.

Chapter Three
Political Involvement and the Degree of Internationalisation

3.1 Introduction

Recently, the focus of international business research has been on internal and external constraints (Ahokangas, 1998). Internal constraints include the history of a company and the way the company's resources are interlinked with each other. External constraints include demand conditions, government policy, and competitor behaviour (Conner, 1991; Mahoney and Pandian, 1992; Ahokangas, 1998). In this thesis, we discuss the involvement from both external and internal dimensions on the degree of internationalisation (DOI). We focus on the external dimension of political involvement and the intervention of financial institutions, and the internal dimension of the monitoring ability of the board of directors.

To date, the discussion of internationalisation theories have concentrated on the question of why companies venture abroad. The root of internationalisation theories can be traced back to the sixteenth century. Interestingly, in numerous economic writings the first formulation of internationalisation theory was politically motivated (Ball and McCulloch, 1999). Mercantilism[58] was the dominant economic ideology of Europe in the early modern period. In 1776, Adam Smith published 'An Inquiry into the Nature and Causes of the Wealth of Nations' in which he tried to destroy the mercantilist philosophy. However, these internationalisation theories are currently largely based on models of Western multinational corporations (MNCs) (Sim and Pandian, 2003). They are not complete explanations of MNCs, especially Asian companies (Sim and Pandian, 2003). Asian companies exhibit specific characteristics

[58] Mercantilism is the economic theory which claims that the prosperity of a nation depends upon its supply of capital. Under this concept, the amount of capital that is represented by bullion (amount of precious metal) held by the country should increase through a positive balance of international trade, with large exports and low imports. Mercantilism suggests that the ruling government should achieve these goals by playing a protectionist role in the economy, such as encouraging exports and discouraging imports, especially through the use of tariffs.

and different internationalisation paths, which are different from MNCs that originate from Western countries (Sim and Pandian, 2003). Western international theories do not usually discuss the role played by the home government because it seldom intervenes in the operation of companies (Zutshi and Gibbons, 1998; Lecraw, 1996; Porter, 2000; Sim and Pandian, 2003). In the Asian context, however, home governments play a critical role in the promotion of outward foreign direct investment (FDI) and international expansion (Pang, 1995). Conversely, based on the grabbing hand model in Shleifer and Vishny (1998), the government will pursue rent-seeking and such intervention of government and financial institutions will be inefficient. Therefore, the relationship between the intervention of government and financial institutions and DOI should be examined empirically.

Werner (2002) analyses recent trends in the international business literature from 1996 to 2000. There are 271 articles located in 20 top management (and management related) journals. According to the summarisation in Werner (2002), the topics that are the most commonly discussed in the area of international business are: (1) the global business environment; (2) internationalisation; (3) entry mode decisions; (4) international joint ventures; (5) FDI; (6) international exchange; (7) transfer of knowledge; (8) strategic alliances and networks; (9) multinational enterprises; (10) subsidiary-headquarters relations; (11) subsidiary and multinational team management; and (12) expatriate management (Werner, 2002, p.280). Among these topics, political and regulatory environments are discussed in the context of the global business environment, for example, Guillén (2000), Moon and Lado (2000), Rugman and Verbeke (1998a, 1998b), and Schuler (1996). Unfortunately, these papers usually focus on the relationship between host governments and the MNCs, not on the relationship between home governments and companies. In the context of the political environment, most papers examine the influence of political risks from host governments on MNCs. Researchers seldom discuss the relationship between political involvement from the home government and DOI of domestic companies (Johanson and Vahlne, 1990).

Most studies that do examine the relationship between political involvement from the

home government and DOI of domestic companies do so in a contextual way (i.e. Aggarwal and Agmon, 1990; Pangarkar, 1998; Sim and Pandian, 2003; Zutshi and Gibbons, 1998; Pananond and Zeithaml, 1998). While there have been some contextual studies, we are not able to find any empirical analysis concerning this topic. If we view internationalisation as a network that is built among customers, suppliers, host governments, home governments, and intermediaries (Johanson and Vahlne, 1977, 1990)[59], it is quite important to understand the relationship between home governments and DOI of domestic companies by examining different Asian countries. Van Hoesel (1999, p.35) concludes that "What is seriously lacking at present are new empirical findings that will enable us to make theoretical statements and hypotheses more concrete." Therefore, this thesis will attempt to shed light on the relationship between political involvement from the home government and DOI of companies by using empirical analysis of samples from two countries, Japan and Taiwan.

We will first introduce the theories regarding the process of internationalisation in Section 3.2.1. Subsequently, in Section 3.2.2, we will discuss the characteristics of Asian countries regarding internationalisation. The literature concerning the relationship between DOI and political involvement will be discussed in Section 3.2.3. Finally, the conclusion of this chapter will be expounded in Section 3.3.

3.2 Theoretical Overview and Literature on Internationalisation

3.2.1 Theories on Internationalisation

Theories concerning internationalisation can be traced back to the sixteenth century. Mercantilism is a sixteenth century economic philosophy based on the belief that a nation's wealth depends on accumulated treasure, usually gold. Mercantilism

[59] The Uppsala Model, which will be discussed in Section 3.2.1, views internationalisation as a network that is built among customers, suppliers, host governments, home governments, and intermediaries (Johanson and Vahlne, 1977, 1990).

suggests that the ruling government should achieve these goals by playing a protectionist role in the economy, such as encouraging exports and discouraging imports, especially through the use of tariffs (Ball and McCulloch, 1999). Adam Smith published 'An Inquiry into the Nature and Causes of the Wealth of Nations' in 1776 to destroy the mercantilist philosophy. He claimed that markets forces rather than government controls should determine the direction, volume, and composition of international trade. Each country should only produce those products that can be the most efficiently produced. This is the theory of absolute advantage. However, Ricardo demonstrated in 1817 that even though one nation held an absolute advantage in the production of two goods, the two countries could still trade with advantages for each as long as the less efficient nation was not equally less efficient in the production of both goods. Currently, this concept of comparative advantage is the basis for international trade and is the main foundation of academic research in the area.

In 1933, Heckscher and Ohlin considered the difference of production costs and developed the Theory of Factor Endowment. This theory states that international and interregional differences in production costs occur because of differences in the supply of production factors. Those goods that cost less can be sold for less in international markets. Therefore, countries with relatively large amounts of labour (e.g. China) should export labour-intensive goods, whereas countries with abundant capital (e.g. the UK) should export capital-intensive goods. However, Heckscher-Ohlin's Theory of Factor Endowment does not consider transportation costs and the time lag between the introduction of a new technology and its worldwide application. The theories of absolute advantage and factor endowment, which focus on the existence of internationalisation rather than its process only, served as an explanation of international trade before the 1960s (Ahokangas, 1998). After the 1960s, theories on internationalisation were still based on the models of Western countries but also started to recognise the process. For example, the Uppsala Model (Johanson and Weidersheim-Paul, 1975; Johanson and Vahlne, 1977, 1990), the Eclectic Paradigm (OLI), and the Investment Development Path (IDP) (Dunning, 1977, 1981a, 1981b) all emphasise the process of internationalisation.

Dunning's Eclectic Paradigm of international production appears to be the most widely accepted theory (Dunning, 1977, 1981a, 1981b, 2001). This theory focuses on how MNCs exploit ownership (O) and location (L) advantages by internationalising (I) markets[60]. According to this model, MNCs will establish production where they can best exploit competitive advantages (due to market imperfections). Although the OLI-parameters explain why internationalisation occurs, they ignore its process. Therefore, Dunning (1981b, 1986) developed the IDP, which provides the OLI with a dynamic process by linking the net outward investment of a country with its economic development. Initially, economic development is low and there is little inward or outward investment (stage 1). When the economy develops, inward investments increase, especially for import substitution goods. Meanwhile, some outward investments occur into neighbouring countries whose economic development is lower (stage 2). Afterwards, inward investments decrease while outward investments increase with further economic development (stage 3). Countries at stage 3 will invest in countries at lower IDP stages to achieve lower labour costs. At stage 4, net outward investments become positive and production becomes multi-nationalised. Finally, a convergence of outward and inward investment flows occurs because "the shift from advantages based more on factor endowment to those based on internalizing international markets" (Sim and Pandian, 2003, p.29). In other words, a country's net outward investment position fluctuates around zero, which means that the inward and outward investments are nearly equal at a very high level.

Compared to the OLI, the Uppsala model emphasises the dynamic process of internationalisation. This theory is based on papers by Johanson and Wiedersheim-Paul (1975) and Johanson and Vahlne (1977, 1990). The model

[60] There are three kinds of advantages in Dunning's Eclectic Paradigm (OLI) of international production:
(1) Ownership-specific or firm-specific advantage (O) refers to technology and skills which can be obtained by one company but not available to other companies.
(2) Internationalisation (I): It is in the company's best interest to use its ownership-specific advantage (internalise) to invest overseas rather than license them to foreign companies (financialise).
(3) Location-specific advantage or Country-specific advantage (L): The company can benefit by locating part of its production plants overseas.

includes the idea that incremental steps to international business expansion are based on a series of incremental decisions, which allows the model to adapt a perspective of evolutionary learning and innovation adoption (Ahokangas, 1998; Sim and Pandian, 2003). The Uppsala model has five successive stages, each representing a higher degree of international involvement.

The first stage starts from no export activity, which is followed by a second stage characterised by modest export sales. The third stage involves systematic export through independent activities (agents). In the fourth stage, companies will establish an overseas sales subsidiary leading to the final stage in which companies produce products in foreign countries[61]. The Uppsala Model is supported by many empirical studies and case studies (e.g., Davidson, 1980, 1983; Welch and Loustarinen, 1986; Erramilli et al., 1999).

Based on the Uppsala Model, Johanson and Vahlne (1990) continue to examine the process of internationalisation from the viewpoint of a network. They claim that internationalisation is the process of establishing networks of business relationships (Johanson and Mattsson, 1988). In order to achieve the objectives of the company, networks are established and maintained and an important portion of resources is held and maintained by relevant sectors within such networks (Bartmess and Cerny, 1993). Given the important role of networks in internationalisation, relationships are established with customers, suppliers, host government bureaucrats, home government bureaucrats, and intermediaries. The network viewpoint emphasises that these relationships will affect the process of internationalisation. Therefore, in order to achieve the objectives of companies and obtain support from other sectors, companies must build the relationships with a variety of sectors, including governments and financial institutions. The network viewpoint is consistent with our argument that relationships exist among companies, intermediaries, financial institutions, and home governments. Therefore, in this thesis, we adopt the network

[61] Johanson and Vahlne (1977, 1990) also claim that internationalisation of companies is associated with the psychic distance[61]. In the beginning, companies will enter those foreign markets that are closer in terms of the psychic distance, but will eventually enter those with greater psychic distances. Similarly, the initial entry will be in a low commitment mode, such as a minority joint venture, and will be followed by higher levels of commitment, such as a wholly-owned subsidiary.

viewpoint and will use empirical analysis to examine these relationships.

Both the Uppsala model and Dunning's IDP explain the development of internationalisation. Studies concerning MNCs in developing countries support the IDP (Sim and Pandian, 2003). Most developing countries with some outward investment are at stage 2 in IDP, NICs/NIEs[62] are at stage 3 (Sim and Pandian, 2003, p.29), and developed countries, such as Japan and the UK, are at stage 4. The Uppsala Model has also received some empirical support (e.g., Davidson, 1980, 1983; Welch and Loustarinen, 1986; Erramilli et al., 1999). In addition, Taiwanese outward investments into China also support the Uppsala Model. The Taiwanese outward investments into China starts from exports and are quickly followed by minority joint ventures and wholly-owned subsidiaries because of a similar culture (i.e. shorter psychic distance) (Van Hoesel, 1996, 1999).

To sum up, the Uppsala Model explains the internationalisation process of small companies, whereas the OLI (Dunning, 1977, 1981a, 1981b, 2001) and the resource-based perspective (Tallman and Fladmoe-Lindquist, 1994; Tallman and Li, 1996) explain the activities of large MNCs. All these theories and perspectives provide some explanation of the internationalisation of companies in Asian countries (Sim and Pandian, 2003). These theories, however, do not completely consider the characteristics of Asian MNCs. The intervention from home governments and financial institutions is neglected. In the following section, we will discuss the relationship between internationalisation, the intervention of home governments, and the intervention of financial institutions in Asian countries.

[62] Newly Industrialized Country (NIC) or Newly Industrializing Economy (NIE) refer to four Asian countries – Taiwan, Hong-Kong, South Korea, and Singapore.

3.2.2 The Relationship between Internationalisation and Home Governments in Asia

Compared to the international expansion of Western and Japanese companies, the rise of the international expansion in developing Asian countries is a more recent trend which has attracted limited attention (Luo, 1999). Before the 1980s, the international expansion of Asian companies was insignificant (except for Japanese companies). Afterwards, in the late 1980s and the early 1990s, the international expansion of East Asian companies caused increased intra-regional direct investments (Sim and Pandian, 2003; Dobson and Chia, 1997). For example, intra-regional direct investments from NICs/NIEs to China and the ASEAN 4[63] are increasing significantly, particularly for IT-related goods (Isogai and Shibanuma, 2000). The expanded intra-regional direct investments from NICs/NIEs are closely related to East Asian increasing market share in the global trade of IT-related goods (Isogai and Shibanuma, 2000).

This phenomenon of rapid internationalisation in Asia is described as the 'flying-geese model'[64], which spreads from one level of economy to another, starting from Japan, followed by the newly industrialised countries/economies (NICs/NIEs, which includes Taiwan, Hong Kong, Korea, and Singapore), and then by the rapidly growing economies in Southeast Asia, such as Indonesia, Thailand, and Malaysia (Pangarkar, 1998; Sim and Pandian, 2003). Recent work has investigated MNCs in developing countries, such as newly industrialised countries/economies (NICs/NIEs) in Asia. Asian companies exhibit characteristics that are not observed in Western companies (e.g. Dunning, 1986; Aggarwal and Agmon, 1999; Dunning and Narula,

[63] The Association of Southeast Asian Nations (ASEAN 4) includes four countries in Southeast Asia: Indonesia, Malaysia, Singapore and Thailand.

[64] The flying-geese model (FG) was originally created by Kaname Akamatsu in the 1930s (Akamatsu, 1935, 1937). It describes the catching-up process of industrialisation in latecomer economies (Kojima, 2000). The FG pattern of industrial development is transmitted from a lead goose (Japan) to follower geese (such as NICs/NIEs, China, Thailand, and Malaysia). This model can be applied to internationalisation. Initial exports of new products by Japan and other developed countries would be limited by high costs, but emerging developing countries would supply low-cost products. Therefore, progress in developed countries will be repeated with time lags in other Asian developing countries. The FG model can explain the shift of a given industry from developed countries (e.g. Japan) to less developed countries (e.g. India). The shifting of comparative advantages reflects how factor endowments, such as labours and skills, change with economic development.

1996; Dunning, Van Hoesel and Narula, 1998; Van Hoesel, 1999; Sim and Pandian, 2003). One of these characteristics is the influence of political involvement on domestic companies in East Asia. Home governments play an important and direct role in the internationalisation of East Asian companies (Zutshi and Gibbons, 1998; Lecraw, 1996). Government policies, regulations, and financial support are also intervening factors in the promotion of outward foreign direct investment (Zutshi and Gibbons, 1998). Although existing theories on internationalisation can elucidate the internationalisation of Western companies, they are not appropriate for East Asian companies in that the political involvement so common in East Asia.

Considering the influence of political involvement on internationalisation in Asia, Zutshi and Gibbons (1998) observe Singaporean government-linked companies (GLCs) and conclude that the government policy has been an important intervening variable in the internationalisation of Singaporean MNCs. The basic concept of internationalisation theories is comparative advantage – the internationalisation strategy is driven by the company's need for resources or markets. In Singapore, however, Zutshi and Gibbons (1998) find that "GLCs internationalize in response to government policy and then strategise and reconfigure to acquire the necessary competencies for competing in the global market" (Zutshi and Gibbons, 1998, p.232). Moreover, Sim and Pandian (2003) observe both Taiwanese and Singaporean companies and indicate that, although some differences in degree between Taiwanese and Singaporean cases are detected[65], the internationalisation strategies are "brought together by an extensive web of ethnic networks and aided by government encouragement and institutional framework" (Sim and Pandian, 2003, p.42). In Taiwan, political involvement also has an important role in the internationalisation strategies of companies (Sim and Pandian, 2003; Van Hoesel, 1996, 1999). On one hand, the Taiwanese government targets some specific industries, such as semiconductor companies in the electronics industry, and supports them in their international activities. On the other hand, the Taiwanese government imposed constraints on the international activities of Taiwanese domestic companies for political reasons. For example, constraints were imposed on Taiwanese FDI to

[65] For instance, Taiwanese companies are more developed and elaborate in the network of production and have greater ODM/OBM participation than Singaporean companies.

China[66] (Van Hoesel, 1996; Sim and Pandian, 2003) even though China was the biggest trading partner with Taiwan in 2005[67]. The Taiwanese government even initiated a 'go south' policy[68] in 1993 to encourage Taiwanese companies to increase investments in Southeast Asia instead of China. Under these circumstances, many Taiwanese companies invest in China via third countries, such as Hong Kong (Van Hoesel, 1996, 1999).

The Japanese government is also famous for its intervention in the internationalisation of Japanese companies. The Ministry of International Trade and Industry (MITI) and the Ministry of Finance (MoF) are the principal agents for playing the intervening role. The Japanese government is similar to the Taiwanese government in that it also targets priority industries to subsidise, such as steel in 1960s, semiconductors in 1970s, and computers in the 1980s (Porter et al., 2000). Moreover, in order to 'stabilise' the economy and reduce excess competition, the Japanese government encouraged merger and cooperation of companies in some raw material industries, such as steel, petroleum, synthetic textiles, and paper (Tsuruta, 1984; Okazaki and Okuno-Fujiwara, 1997). In addition to these raw materials industries, the automobile industry is another interesting case. Due to the large number of automobile competitors, MITI tried to establish three car groups in the 1960s[69], each group specialised in different products. However, this plan finally failed. Ironically, political involvement is seldom found in internationally competitive industries, for example, audio equipment in the 1970s and automobiles in the 1980s. Honda, one of the most competitive automobile companies in the world,

---

[66] All investment to China must register with the Ministry of Economic Affairs (MOEA) and cannot exceed a certain amount.

[67] The total trading amount between Taiwan and China is NTD 65,972,683,337 in 2005. The ratio of Chinese export to total export is 21.55% and the ratio of Chinese import to total import is 11.06% in 2005. The data is provided by Taiwanese Ministry of Economic Affairs (MOEA).

[68] "In the 1990s, Taiwan promoted a 'go south' policy of investment in Southeast Asia. To enhance economic ties and substantive mutual interests with the region, Taiwan has signed agreements on the protection of mutual investment, avoidance of double taxation, customs cooperation, agricultural cooperation, technical cooperation, tourism cooperation, and aviation rights with most of the nations of Southeast Asia." (Source: the Republic of China Yearbook – Taiwan 2002, published by Government Information Office in July 2002.) The Republic of China Yearbook – Taiwan 2002 can be obtained in http://www.gio.gov.tw/taiwan-website/5-gp/yearbook/2002/index.htm.

[69] MITI felt that Japan's automobile industry of ten manufacturers should be merged into two international majors (namely Toyota and Nissan) and one minicar manufacturer.

even ignored the original suggestion from MITI, which attempted to discourage it from producing automobiles.

Based on these examples of political involvement in Asia, it can be seen that although political involvement is common in many Asian countries, the types and patterns are distinct between countries. According to Pangarkar (1998, p.110), "some economies are characterized by a large government-linked sector (e.g. Malaysia, India) whereas others are characterized by a less salient government-linked sector but indirect support from the government (e.g. South Korea), and yet others by limited government involvement (e.g. Hong Kong)." Moreover, the stages of economic development are also different (Pangarkar, 1998). Japan is the most economically developed country in the region and has a high DOI, whereas most Southeast Asian countries, such as Malaysia and Thailand, are less developed and have a lower DOI. In addition, there are significant differences in the institutional framework among East Asian countries, such as the patterns of cross-shareholding, the strength and support of the banking sector, and the probity of the legal system. Therefore, it is critical to examine the relationship between internationalisation and political involvement under different environments and systems.

Unfortunately, literature concerning the relationship between internationalisation and political involvement under different environments and systems is sparse. From a contextual viewpoint, Aggarwal and Agmon (1990) examine three stages of the government-business relationship in the process of internationalisation of companies under different stages of economic development in developing countries, especially NICs/NIEs. They argue that the role of government is important in directing initial international trade, but it will change as the country develops. The first stage is the import substitution stage when the government leads the corporate sector. The government attempts to determine the long-term comparative advantages and the paths to effect them. Pricing is also decided by negotiations between the government and the corporate sector, not by the market.

As time proceeds, the accumulation of knowledge and skills leads companies to the

second stage, the export promotion stage. Although the domestic market is usually protected at the second stage, foreign markets are competitive. Therefore, companies must adapt themselves to a competitive market and may still need to negotiate with their governments for support and subsidies (Becker, 1982). This stage is a period of transition when the control from the government starts to decrease. Success in the second stage will lead to the third stage – the FDI stage. Companies become the 'driving force' at this stage (Aggarwal and Agmon, 1990, p.175) and the government becomes a partner. The primary goals of companies at the third stage are to maintain and expand the export market and reduce the risks associated with the changes of policies in target countries. Compared to the second stage, which is a transitional stage, the third stage is a stabilisation stage. Knowledge and advanced technology gradually shift companies away from the government.

This three-stage model is consistent with the development experiences in India, South Korea, and Singapore (Aggarwal and Agmon, 1990). According to this classification, Singapore is mainly at the second stage with some successful companies at the third stage. South Korea is moving out of the second stage and heading towards the third stage (Aggarwal and Agmon, 1990). Aggarwal and Agmon (1990) imply that the influence of political involvement on internationalisation will gradually diminish as the country develops. It is important to examine whether this argument is empirically supported. Taiwan is quite similar to Japan in its legal systems, banking systems, and board structure (Filatotchev et al., 2005)[70]. However, these two countries may not be positioned at the same stage of economic development (Aggarwal and Agmon, 1990; Sim and Pandian, 2003). Therefore, by comparing the empirical results from the two countries light can be shed on the relationship between internationalisation and political involvement.

[70] Japanese and Taiwanese companies operate under a two-tier board structure, with a board of directors and a number of supervisors. The Company Law in Taiwan (Articles 216–227) specifies that companies should have supervisors (statutory auditors in Japan). However, this two tier structure is not similar to formal two-tier systems because there is a lack of any formal representation from labour in Taiwan and Japan. Pleas refer to Section 2.2.3 and Section 2.3.3 for the discussion.

3.2.3 Literature on Political Involvement by Home Governments

The literature that discusses the relationship between political involvement and DOI can be divided into two categories. The first category discusses how the political environments in host countries affect the investment strategies of companies and how companies handle political uncertainty in host countries[71]. Political uncertainty is defined as the probability of a policy change by government and the likelihood that any change will be adverse due to the lobbying behaviour of their competitors in the host country (Delios and Henisz, 2003). According to the level of policy uncertainty, companies set their multinational entry strategies – distribution entry, joint venture manufacturing plant entry, or wholly-owned manufacturing plant entry – to extend their DOI (Boddewyn and Brewer, 1994; Delios and Henisz, 2003a, 2003b). Prior studies conclude that as long as political environments are extremely uncertain, multinational enterprises will seek local partners to provide them with additional information about local markets. Unfortunately, most research that examines political involvement focuses on political uncertainty in host countries rather than the relationship between international expansion and political involvement from the home governments.

Since political involvement from the home governments is very rare in stock market capitalism, most research concentrates on countries with relational capitalism[72], such as Asian countries. The second category of literature discusses the relationship between political involvement from the home governments and the characteristics of a company, such as the DOI and firm performance. (Mascarenhas, 1989; Kole and Mulherin, 1997; Boardman and Vining, 1982, 1989; Feeney and Hillman, 2001). There are two different views concerning political involvement from the home governments. The first is an optimistic view (Gerschenkron, 1962), which argues that, in terms of economic growth, the government can use its ownership in a company to develop certain strategies through both direct ownership and control over finance. For example, Gerschenkron (1962) suggests that the government, by becoming

[71] Regarding the discussion of political risk of host countries, Henisz and Williamson (1999), Henisz (2000), Delios and Henisz (2003a, 2003b) have detailed discussions.
[72] For the introduction of relational capitalism, please refer to Section 2.1.

involved in financial institutions, can encourage lending to those private sector companies that operates politically motivated projects. Furthermore, the government can intervene in the finance of a company in many ways. For example, it can provide subsidies directly for the politically desirable projects or can encourage state-owned banks to lend money to the company.

The second view, however, argues that government ownership is less efficient than private ownership in a competitive market without financial ties (Boycko et al., 1996; Dewenter and Malatesta, 2001; Mascarenhas, 1989) and that firm performance of state-owned companies (SOEs) and government-linked companies (GLCs) is inferior to publicly traded companies (Shleifer, 1998). This is mostly explained by the argument that the government lacks competitiveness and pursues political welfare instead of a profit-maximisation objective. According to this argument, the government may acquire controlling power from companies in order to provide employment, subsidies, and other benefits to supporters who will return the favour in the form of votes and political contributions. For example, La Porta (2002) concludes that greater government ownership of banks may lead to slower subsequent development of the financial system and lower growth of per capita income and productivity. In addition to the slower growth of per capita income, Mascarenhas (1989) argues that SOEs focused on their domestic market with a narrow product line and had a conservative customer base. He points out that SOEs are overseen by politicians and government in order to maximise domestic votes. Boardman and Vining (1989) also conclude that SOEs and mixed companies are less efficient and less profitable than similar publicly traded companies. For example, according to their empirical results, the return on equity (ROE), the return on assets (ROA), and the return on sales (ROS) of SOEs are lower than publicly traded companies by 11.65%, 1.73%, and 2.23% respectively.

In addition to the empirical studies, Shleifer and Vishny (1994) build a theoretical model using an economic model to describe a game among the managers, the public and the politicians. Their model leads to the conclusion that when managers control companies, politicians may use subsidies and bribes to convince them to pursue

political benefits. However, when politicians control companies, managers will use resources to convince them not to pursue political objectives. From this viewpoint, we can observe that a manager's objective is different from that of a politician.

Although there are many studies that discuss the issues relating to government ownership, most of them only discuss its relationship with firm performance (e.g., Sun et al., 2002) and the conclusion is that government ownership is inefficient in terms of firm performance. Studies relevant to the relationship between internationalisation and political involvement from the home governments are very rare. Most research uses a contextual view to examine this topic in Asian countries[73] rather than using empirical analysis (Zutshi and Gibbons, 1998). Furthermore, apart from government ownership, other variables that can measure political involvement are seldom used.

Mascarenhas (1989) is one of the few researchers that use the empirical analysis. He uses a sample of companies in the offshore drilling industry in the US to examine the relationship between ownership structure and the domain of a company in the international market. He classifies these companies into three groups – publicly traded, state-owned, and privately held and uses seven dimensions to capture the domain of a company in the international market[74]. The independent variables include firm size, the nationality of the company, and ownership structure[75].

---

[73] These contextual studies are discussed in Section 3.2.2.

[74] The seven dimensions are: (1) Growth: the average annual growth rate of a company. This variable is measured by the change in number of rigs in a company's fleet between year t and year t+1 divided by the number of rigs in the company's fleet in year t; (2) International scope: This variable is measured by the number of countries in which a company operates; (3) Domestic market dominance: the market share of a company in its home country. This variable is measured by the number of rigs a company has in its domestic market divided by the total number of rigs in the company's domestic market; (4) Product line scope: the breadth of a company's product line. This variable is measured by the number of rig types in a company's fleet; (5) State-owned customers overseas: the propensity of a company to have overseas state-owned customers. It is measured by the number of rigs overseas that are contracted with state-owned customers divided by the number of rigs a company operates overseas; (6) Customer-based stability: the propensity of a company to enter into long-term contracts with its customers. It is measured by the company's mean of the proportion of years in a rig's life which is contracted with the same customer (this variable is available when a customer has the contract for more than one year); and (7) Advanced technology: the propensity of a firm to use high-cost, complex technology. It is measured by a dummy variable, which equals 1 if the company has a drill ship rig or semi-submersible rig in its fleet, and 0 otherwise.

[75] Based ownership structure, firms are classified as stated-owned, publicly traded, and privately held.

Mascarenhas (1989) indicates that state-owned companies are mostly domestic and have a limited foreign investment. This is possibly because political criticism discourages foreign investment by state-owned companies. Moreover, state-owned companies tend to focus on their domestic market with a narrow product line and have a stable customer base, whereas privately held companies also operate domestically with a narrow product line but have an unstable customer base. Mascarenhas (1989) proves that ownership structure is significantly related to international scope, product-line scope, state-owned customers overseas, customer-based stability, and advanced technology. For example, the mean of international scope[76] in publicly traded companies is 2.91, which is greater than 1.21 in state-owned companies.

On the other hand, Mascarenhas (1989) infers that companies with a greater market share in the domestic market are more visible and thereby more likely to be controlled by the government. Government officials may focus their efforts on larger and more visible companies in their domestic markets. In this way, it is easier to control the companies and extract benefits. The government may try to control the company through government ownership. Therefore, the characteristics of a company may be also associated with ownership structure.

Van Hoesel (1999, p.35) concludes that "What is seriously lacking at present are new empirical findings that will enable us to make theoretical statements and hypotheses more concrete". In order to fill the lacuna, we use empirical analysis rather than the contextual viewpoint to examine the relationships between political involvement, the intervention of financial institutions, and DOI. The following section will discuss how to measure DOI by citing prior literature.

3.3 Conclusion

This chapter has reviewed the theories on internationalisation and its measurement.

[76] The variable is measured by the number of countries in which a company operates.

The focus of this chapter has been on the relationship between internationalisation and home governments in Asia and therefore provides the necessary context for research concerning this relationship.

The two most relevant theories concerning the internationalisation in Asia are the IDP, which is a dynamic process linking the net outward investment of a country with its economic development (Dunning, 1981, 1986), and the Uppsala model, which emphasises the dynamic process of internationalisation (Johanson and Wiedersheim-Paul, 1975; Johanson and Vahlne, 1977, 1990). Both the Uppsala model and Dunning's IDP explain the development of internationalisation. Studies concerning MNCs in developing countries support the IDP. The Uppsala Model has also received some empirical support (e.g. Davidson, 1980, 1983; Welch and Loustarinen, 1986; Erramilli et al., 1999).

Although existing theories on internationalisation can elucidate the internationalisation of Western companies, these theories may not be appropriate for East Asian companies where political involvement is common. Since political involvement by home governments is very rare in stock market capitalism, most research concerning political involvement by home governments concentrates on countries with relational capitalism[77], such as Asian countries. Recent work has begun to investigate MNCs in developing Asian countries because Asian companies exhibit political involvement, which is not observable in Western companies. In Asia, government policies, regulations, and support are important intervening factors in the promotion of outward FDI. For example, in Taiwan, political involvement is significantly related to the internationalisation strategies of companies (Sim and Pandian, 2003; Van Hoesel, 1996, 1999). The Taiwanese government targets some specific industries, such as semiconductor companies in the electronics industry, and supports these industries in their international activities. Similarly, the Japanese government also targets priority industries to subsidise (Porter, et al., 2000).

Although political involvement is common in Asia, the types and patterns are distinct

[77] For the introduction of relational capitalism, please refer to Section 2.1.

across countries. Moreover, the stages of economic development are also different. From the viewpoint of economic development, Japan is the most developed country in the region and has a great DOI, whereas most Southeast Asian countries are less developed and have a lesser DOI. There are also significant differences in the institutional framework among East Asian countries such as the patterns of cross shareholding, the strength and support of the banking sector, and the probity of the legal system. Therefore, it is critical to examine the relationship between internationalisation and political involvement under different environments and systems.

This chapter has also discussed the measurement of DOI. It is a critical but unresolved issue in the field of international research. What measurements should be included to measure DOI and how to combine these measurements are two important considerations. It remains questionable whether these factors can be combined into one index as by so doing the analysis could be distorted. Therefore, in this thesis, we select measurements according to previous studies and combine them by adopting SEM, which will be introduced in Chapter 6.

Since most studies concerning internationalisation in Asia are contextual, Van Hoesel (1999, p.35) concludes that "What is seriously lacking at present are new empirical findings that will enable us to make theoretical statements and hypotheses more concrete". In order to fill the gap, we use empirical analysis to examine the relationships between political involvement, the intervention of financial institutions, and DOI. Based on the theories on internationalisation and the relevant literature on internationalisation in Asia, we build hypotheses in the following chapter. In addition to internationalisation, the following chapter also examines hypotheses regarding the relationship between political involvement, the intervention of financial institutions, and firm performance.

Chapter Four
Theory and Hypotheses on Political Involvement, Performance, and the Degree of Internationalisation

4.1 Introduction

According to the previous chapters, which discuss political involvement, the intervention of financial institutions, and the board of directors in Japan and Taiwan, it is evident that these dimensions are related to firm performance and the degree of internationalisation (DOI). In the light of the relevant literature, this chapter establishes hypotheses concerning the relationship between these different dimensions. There are two main topics in this chapter. The first topic is the examination of the relationship between the intervention of governments and financial institutions and firm performance, and the second is the examination of the relationship between the intervention of governments and financial institutions and DOI.

Section 4.2 focuses on firm performance. Based on the discussion in Chapter 2, in Section 4.2.1 we build hypotheses around the question of why there is intervention from the government and financial institutions, such as banks and insurance companies. We try to examine whether governments and financial institutions intervene in the operation of companies with poor firm performance. Since governments and financial institutions usually play a monitoring role when a company has a financial crisis in East Asia (Van Rixtel, 2002), we also investigate whether political involvement and the intervention of financial institutions are positively associated with subsequent firm performance. Section 4.2.2 tries to answer this second question of whether the intervention of governments and other financial institutions is positively related to subsequent firm performance.

Section 4.3 focuses on the relationship between the intervention of governments and financial institutions and DOI. We also try to answer two questions about this aspect. The first question, which is discussed in Section 4.3.1, is whether the DOI of a company is related to the intervention of governments and financial institutions. Since it is common in East Asia for the governments to play an activist and supportive role in the internationalisation of its companies, we also investigate whether the intervention of governments and financial institutions is associated with the subsequent DOI. In Section 4.3.2, we try to answer the second question, which is whether the subsequent DOI is affected by the intervention of governments and financial institutions. The hypotheses relating to the relationship between the board of directors and firm performance/DOI are also discussed in this chapter. A summary of this chapter is presented in Section 4.4.

4.2. The Relationship between Political Involvement and Firm Performance

4.2.1 Why do the government and financial institutions intervene?

The first question we try to answer regarding the first topic is why governments and financial institutions intervene in the operation of a company. In Japan, there is a pattern of cross-shareholding by affiliated companies, often including customers and suppliers. The dominant shareholder is often a main bank[78] or a '*keiretsu*' partner[79]. After dissolving into several small individual companies and banks after World War II, the former conglomerates (*zaibatsu*) started to play the role of fund suppliers (Van Rixtel and Hassink, 2002). They supply efficient long-term funds to their related companies or subsidiaries, which allows them to buy each other's shares. These cross-shareholdings can prevent hostile takeovers and form stable ownership.

[78] Please refer to Section 2.2.2 for the discussion of the main bank system.

[79] There are several definitions of '*keiretsu*'. Odagiri (1992, p.167) defines '*keiretsu*' as "a group consisting of a bank (with its affiliated financial institutions of other kinds, such as an insurance company or a trust bank) and the companies for which it acts as the main bank (main supplier of funds)". The most obvious characteristics of '*keiretsu*' are affiliation, long-term relationships, information sharing, cross shareholding, and extended networks (Van Rixtel and Hassink, 2002).

Corporate governance in Japan is related to the existence of these kinds of informally organised business groups, the so-called '*keiretsu*'. The main bank system, the *keiretsu* alliance and the government all play the role of protector or supporter (Monks and Minow, 2004). The system of *amakudari* is an important issue among these protectors and supporters.

Some studies focus on the relationship between Japanese bank performance and the system of *amakudari*, which means retired government officials who are appointed to board positions in public companies. Van Rixtel and Hassink (2002) suppose that the system of *amakudari* could be helpful in exercising *ex-ante* and *ex-post* monitoring. In *ex-ante* monitoring, the system of *amakudari* could operate as a watchdog to take precautions before a financial crisis happens. In *ex-post* monitoring, the system of *amakudari* is viewed as a 'trouble-shooter' who can restore confidence among depositors and solve an acute financial crisis. Those troubled banks may attempt to employ more retired officials from MoF (the Ministry of Finance) and BoJ (the Bank of Japan) because such retired officials can persuade the relevant regulators to help them, for example by petitioning for a loan deadline to be extended or by asking for additional funding from the government. Given the empirical results in Van Rixtel and Hassink's (2002) study, which indicate that there is a negative relationship between firm performance and the inflow of retired MoF and BoJ staff members, they argue that the system of *amakudari* is used as a trouble-shooter. Furthermore, there is a positive relationship between the value of risky loans granted and the inflow of retired MoF and BoJ officials. That is, the value of risky loans granted by banks increases after these retired bureaucrats are recruited, which suggests that the purpose of employing MoF and BoJ officials is to buy influence from the government and banks. Similar to Van Rixtel and Hassink (2002), Horiuchi and Shimizu (2001) classify 125 regional banks into four categories, which reflect different levels of utilisation of retired officials on the board. Their empirical analysis shows that those regional banks that accept ex-bureaucrats from MoF reduce capital adequacy levels and increase the bad loan ratio. This finding is similar to that of Van Rixtel and Hassink (2002). They conclude that the system of *amakudari* enables banks to expand risk-taking activities and thereby sabotages the monitoring system.

Unfortunately, similar studies in Taiwan are very rare, even though political involvement is significant. Ma and Yu (2002) examine the first power-shift in Taiwan from the viewpoint of the ruling party. Taiwan experienced its first power-shift in March 2000, ending the KMT's position as the ruling party for over half a century. During its first two years in power, the new ruling party (DPP) reappointed CEOs and directors in many state-owned and government-linked companies[80]. Ma and Yu (2002) build two main hypotheses – the control-driven hypothesis and the performance-driven hypothesis. The control-driven hypothesis suggests that the motivation of political involvement is to control companies for domestic votes and policy implementation. Conversely, the performance-driven hypothesis suggests that the motivation of political involvement is to improve firm performance.

Ma and Yu (2002) find that there is a strong relationship between policy control considerations and the turnover rate of directors. That is, the percentage change in board members after the power-shift is significantly higher for policy-sensitive firms which are highly regulated or instrumental to policy implementation, such as banking, energy, transportation and telecommunication industries. Subsequent firm performance, however, is not related to the turnover rate of directors. This finding does not support the performance-driven hypothesis. It indicates that the motivation behind this kind of board restructuring is control-driven rather than performance-driven. By using the event study, Ma and Yu (2002) also obtain a negative market reaction after the board restructuring, which supports the control-driven hypothesis because most investors think the government will use political power to implement policies rather than improve firm performance.

Based on prior studies, we believe that the system of *amakudari* is not solely used as a reward system (Van Rixtel and Hassink, 2002). That is, these retired bureaucrats from government institutions, such as MoF and BoJ, are sent to troubled companies in case of a financial crisis or the threat of insolvency[81]. These retired bureaucrats

[80] For the introduction of the KMT party and the DPP party in Taiwan, please refer to Section 2.3.1.
[81] This kind of appointment is often reported by the media or is published in the government white book.

can exercise their monitoring function and use their political networks to help the company, such as extending the deadline for loans or negotiating for more funding from the government. Given this, we think that the governments in Japan and Taiwan not only play the role of protector or supporter but also pay attention to the policy implementation. Since it takes some time for the government to recognise poor firm performance and thereby have effects, there is a time lag before they intervene. Thus, we hypothesise:

Hypothesis 1: The relationship between firm performance (t) and political involvement (t+1) is negative.

Sheard (1994) claims that companies are more likely to have bank executives on their boards when they rely heavily on bank loans. Kaplan and Minton (1994) and Morck and Nakamura (1999) also report that poor share performance raises the probability of a banker being appointed to the board. Furthermore, Hoshi et al. (1990) find that main banks in Japan orchestrate bailouts and accept disproportionate responsibility of bad debts when their client companies have financial problems. Hypothesis 1 supports the argument that that in order to improve firm performance and help the company solve financial crises, the government will appoint representatives to intervene in the board. For the same reason, financial institutions[82], such as banks and other *keiretsu* partners, will also dispatch representatives to the boards to exercise the *ex-post* monitoring functions (Sheard, 1994; Morck and Nakamura, 1999; Kaplan and Minton, 1994; Kang and Shivdasani, 1995). It also takes some time for financial institutions to recognise poor firm performance and thereby take action; there is a time lag before they intervene. Thus, we hypothesise:

Hypothesis 2: The relationship between firm performance (t) and the intervention of financial institutions (t+1) is negative.

The relationship between firm performance and the board of directors is discussed by

[82] The financial institutions include banks, securities companies, institutional investors and other cross- shareholding companies.

many prior studies. Various variables are used, such as CEO duality[83], board composition[84], and ownership structure[85]. However, these studies are not always consistent (Dalton et al., 1998). On the one hand, there is evidence that the monitoring ability of the board has influence on firm performance (Coles et al., 2001), but on the other hand, the empirical results also imply the existence of a reverse causality. Poor firm performance may also have influence on the structure of the board of directors (Sanders and Carpenter, 1998; Denis and Sarin, 1999). In order to improve firm performance, the board of directors may change its composition and quality to have better monitoring ability, which means that firm performance will be negatively related to the monitoring ability of a board in the future. For example, Hermalin and Weisbach (1988) and Weisbach (1988) conclude that the ratio of independent directors on a board increases when a company has performed poorly. Hermalin and Weisbach (2003) also indicate that poor firm performance often result in a change of board members. Therefore, we hypothesise:

Hypothesis 3: The relationship between firm performance (t) and the monitoring ability of the board (t+1) is negative[86].

4.2.2 Is subsequent firm performance positively related to such intervention?

The second question concerning the relationship between the intervention of governments and financial institutions and firm performance is whether the intervention of governments and financial institutions is positively related to the subsequent firm performance. In relational capitalism, the government can control the operation of a company through the patterns of government ownership and government appointed directors (La Porta et al., 2002; Sun et al., 2002). This

[83] For example, Baliga, Moyer and Rao (1996), Brickley, Coles and Jarrell (1997), and Fosberg and Nelson (1999) have studied the relationship between CEO duality and firm performance.

[84] For example, Yermack (1996), Agrawal and Knoeber (1996), Shivdasani and Yermack (1999), Yeh, Chou, and Chang (1999), and Bhagat and Black (2001) have examined the relationship between board composition and firm performance.

[85] Bhagat and Black (2001) include most governance-related variables in their empirical analysis to examine the relationship between board independence and firm performance.

[86] Section 5.3.1 will introduce the variables that are used to measure the monitoring ability of a board.

business-government relationship can help the company to gain more support from the government and help top management team (TMT) members to develop better strategies. For example, government appointed directors can supply their knowledge of government bureaucratic procedures and their prediction of government actions (Agrawal and Knoeber, 2001; Colignon and Usui, 2003). The government may also utilise these appointed retired bureaucrats (*amakudari*) on the board to help the company solve financial problems, especially in the banking sector. For example, the government can extend the deadline of loans from state-owned banks or give the troubled companies more financial support (Aoki and Patrick, 1994; Porter et al., 2000). Horiuchi and Shimizu (2001) point out that after the bubble economy at the beginning of the 1990s, the Japanese government allocated 60 trillion yen of public funds as of March 1999 to manage the bank crisis.

Some recent papers support the viewpoint that the government will give more support to companies with which it has a closer connection. Sapienza (2004) argues that state-owned banks in Italy might be charging lower interest rates to certain companies in accordance with political objectives. They find that in areas where the political party that runs the state-owned banks is stronger, the companies in those areas that borrow money from them would obtain a higher discount than in other areas. Johnson and Mitton (2003) also demonstrate that capital controls in Malaysia provide rents to politically connected companies. In a cross-country study, Faccio (2006) finds that companies with political connections can access debt financing more easily and enjoy lower taxation. Faccio et al. (2006) conclude that politically-connected companies are significantly more likely to be bailed out than similar non-connected companies. On the evidence from prior studies, companies which have good connections with the government may obtain government support and thereby undermine competitors, or can forestall government actions which might be inimical to the company. Based on these reasons, we hypothesise:

Hypothesis 4-1: The relationship between political involvement (t) and the subsequent firm performance (t+1) should be positive.

On the other hand, based on the grabbing hand model (Shleifer and Vishny, 1998), political involvement has long been considered a major reason for inefficiency (Shleifer and Vishny, 1994, 1998; Shleifer, 1998). Most studies focus on government ownership of banks. Barth et al. (1999) provide empirical evidence that government ownership of banks is associated with a low level of financial development. Beck and Levine (2002) fail to find any positive effect of government ownership of banks on growth. Caprio and Peria (2000) also find that government ownership of banks is associated with a higher likelihood of banking crises.

In addition to studies regarding government ownership of banks, Mascarenhas (1989), Vining and Boardman (1992), Boardman and Vining (1982, 1989), Dewenter and Malatesta (2001), and Sun et al. (2002) analyse how government ownership affects firm performance. Vining and Boardman (1992) and Boardman et al. (1989) point out that government ownership is less efficient than private ownership. Mascarenhas (1989, p.582) also concludes, "Publicly traded firms exhibited generalism by operating in many geographic markets and offering a wide product line. In contrast, state-owned enterprises focused on their domestic market with a narrow product line and had a stable customer base[87]." Sun et al. (2002) investigate whether the extent of government ownership affects the performance of Chinese state-owned enterprises (SOEs) in the privatisation process[88]. They conclude that the relationship between government ownership and firm performance is nonlinear. That is, a portion of government ownership has positive effects on SOE performance but there is entrenchment. The relationship between government ownership and firm performance is an inverted U-shape. This conclusion shows that too much government ownership may undermine firm performance.

---

[87] Mascarenhas (1989, p.583) defines that publicly traded firms are firms that issue shares and are traded in stock exchanges. State-owned enterprises are owned by governments.

[88] The state-owned enterprises (SOEs) in China now have 'partial privatization' (Sun et al., 2002, p.4). Sun et al. (2002, p.2) indicate that "The official term used in China is not 'privatization' but 'share ownership scheme'. The Chinese government try very hard to separate the two terms, as 'privatization' implicitly assumes capitalistic private ownership. According to the 'share ownership scheme', as long as the assets of an SOE do not fall into the hands of private investors, the SOE is still not privatized and hence still conforms with communism's public ownership principle. Such a distinction is more than just ideological, because for a large number of privatized enterprises, the Chinese government still retains a substantial portion of ownership." Therefore, Sun et al. (2002) examine how the changing mix of public and private ownership influences firm performance of the SOEs.

Moreover, troubled companies are more willing to employ the retired bureaucrats with the highest reward because they want to buy influence from them (Van Rixtel and Hassink, 2002). Generally speaking, troubled companies are inclined to invest in risky projects, but the regulations set by the government may forbid them to do so (Van Rixtel and Hassink, 2002, p.3). Therefore, they need more retired bureaucrats to persuade the government to extend more loans and allow them to undertake more risky investment projects. Hence, the *amakudari* system here is used to buy influence from the government through the retired bureaucrats, instead of monitoring the troubled companies to restore profitability. Based on the grabbing hand model argued by Shleifer and Vishny (1998), we can have another opposite hypothesis:

Hypothesis 4-2: The relationship between political involvement (t) and the subsequent firm performance (t+1) will be negative.

Financial institutions, especially banks, will also appoint representatives to the board to help the company solve financial problems (Aoki and Patrick, 1994, p.188). These representatives are also used for a monitoring function. The most commonly utilised methods in banks involve reducing interest and appointing representatives to the board. For example, in 1992, Sumitomo Bank dispatched five managers, including executive directors, as trouble-shooters to Itoman Corporation as vice presidents (SIC code: 8009). It also implemented interest reductions and wrote off 300 billion yen in losses in 1993 (Sheard, 1991, p.47-52). Additionally, in order to save Nihon Housing Loan (SIC code:8581), Sanwa Bank also dispatched officers to assess its financial position and arranged assistance packages including interest reductions from 6.55% to 3.25% in 1993 (Aoki and Patrick, 1994, p.225). Morck and Nakamura (1999), Kaplan and Minton (1994) and Kang and Shivdasani (1995) examine whether the subsequent firm performance is related to prior outside director appointments in Japan. Kaplan and Minton (1994) find no deterioration in firm performance following outside director appointments. Kang and Shivdasani (1995) suggest that the turnover of presidents is positively associated with the subsequent firm performance only when their removal is expected to rectify poor firm

performance. Based on prior studies and examples, we hypothesise:

Hypothesis 5-1: The relationship between the intervention of financial institutions (t) and the subsequent firm performance (t+1) should be positive.

Similar to Hypothesis 4-2, another kind of relationship is also possible. Because of the moral hazard, the companies that have serious financial problems are more willing to employ bank representatives to the board. In this way, they can obtain more funding and support to invest in high profit but high risk projects. For example, Morck and Nakamura (1999) document that companies experience negative share returns in the year following bank director appointments. If the reason for recruiting professional representatives to the board is to obtain considerable financial support and buy influence rather than exercise monitoring, the subsequent firm performance may be jeopardised. Hence, the hypothesis is as follows:

Hypothesis 5-2: The relationship between the intervention of financial institutions (t) and the subsequent firm performance (t+1) will be negative.

We also examine the relationship between the board of directors and the subsequent firm performance. According to agency theory (Jensen and Meckling, 1976), a company with a board with better monitoring ability, such as one with more outside directors, dual leadership structure, more performance contingent pay, and a high ratio of board ownership will have better firm performance. For example, there is evidence that companies with majority-independent boards perform more effectively than other boards in particular tasks, such as replacing the CEO (Weisbach, 1988), and thereby have better firm performance. However, some studies do not find a significant relationship between the monitoring ability of the board and firm performance. For example, some studies of Australian, Singaporean, and United Kingdom companies find no correlation between board composition and firm performance (Faccio and Lasfer, 1999; Mak and Li, 2001). A few studies even find that companies with a high percentage of independent directors may perform worse. Yermack (1996) reports a significant negative correlation between the ratio of

independent directors and contemporaneous Tobin's Q but no significant correlation for other performance variables (sales/assets; operating income/assets; operating income/sales). Although much has been said about the corporate governance mechanism, the results are not always consistent (Bhagat and Black, 1999, 2001). But, based on the previous literature (Gompers, et al., 2003), a company with a board with better monitoring ability, such as more outside directors and higher board ownership, is expected to have better performance.

Hypothesis 6: The relationship between the monitoring ability of the board (t) and the subsequent firm performance (t+1) is positive.

Moreover, since political involvement and the intervention of financial institutions in Japan and Taiwan means that they can appoint representatives to the board, the monitoring ability of a board will be influenced by them. This phenomenon allows the board of directors to play an intermediate role between the government/financial institutions and firm performance. This research takes the implicit relationship into consideration by using structural equation modelling (SEM). To focus on this implicit relationship, we hypothesise:

Hypothesis 7: The board of directors may moderate the relationship between performance and the intervention of government and financial institutions.

4.3 The Relationship between Political Involvement and the Degree of Internationalisation

4.3.1 Is the degree of internationalisation related to the subsequent intervention of governments and financial institutions?

In addition to firm performance, this research also examines DOI and discusses whether the intervention of government and other financial institutions is associated

with firm strategy on this matter[89]. Based on the discussion in Chapter 3, we find that governments in Asian countries play a very critical role in the development of internationalisation. Current internationalisation theories, however, do not consider the special phenomena in Asia, such as the intervention of governments and financial institutions. Therefore, in addition to the contextual viewpoint, it is important to observe the relationship between the intervention from government and financial institutions and DOI in Asia from an empirical viewpoint. The first question we ask in this section is whether DOI is related to the subsequent intervention of governments and financial institutions? In other words, are companies with higher DOI more likely to be intervened by governments and financial institutions?

Companies may prefer less political involvement because the government is commonly regarded as a major source of inefficiency. Government ownership is used to pursue political goals, extract rents, and transfer resources to supporters instead of maximising profits (Mascarenhas, 1989; Shieifer and Vishny, 1994, 1998; Shieifer, 1998; Johnson and Mitton, 2003; Garrett and Lange, 1995). If politicians and government officials are interested in maximising domestic votes, the objective of maximising the interests of shareholders will be neglected. From the government's viewpoint, it is less likely to intervene in the operation of a company with a high DOI because they can generate more votes by intervening in the operation of domestic companies where domestic officials can have greater control of firm activities (Mazzolini, 1980a, 1980b, Mascarenhas, 1989). From the company's viewpoint, international expansion implies greater mobility for capital (Keohane and Milner, 1996). Owners of capital will use the threat of exit as leverage to their political influence (Hirschman, 1970, Keohane and Milner, 1996). Internationally mobile capital will gain political power as internationalisation proceeds. Therefore, those companies that gain political power may try to decrease political involvement because the intervention of government is commonly regarded as inefficient (Shleifer and Vishny, 1994; Shleifer, 1998). In addition, as discussed in Section 3.2.2, political involvement and the role of a government will change with internationalisation and the economic development process (Aggarwal and Agmon, 1990; Sim and Pandian,

[89] The measurement of DOI is discussed in Section 3.3.

2003). Therefore, different stages of internationalisation will have different influences on political involvement. According to Aggarwal and Agmon (1990) and Dunning (1981, 1986), a higher DOI (i.e. Stage 3 in Aggarwal and Agmon (1990) or Stage 4, 5 in Dunning (1981, 1986)) will reduce the ability of the government to control the company. Considering the argument that it takes some time for the government to influence DOI of a company, there is a time lag between DOI and political intervention. Thus, we hypothesise:

Hypothesis 8-1: The degree of internationalisation (t) is negatively associated with the subsequent intervention of governments (t+1).

Although the government is commonly regarded as the source of inefficiency, companies with a lower DOI may prefer political involvement. From the company's viewpoint, the home government can offer some support by acting on the company's behalf (Poynter, 1985). Political involvement from the home government can increase their bargaining power when they negotiate with host countries, especially in countries with high political risk[90]. Moreover, political involvement of the home government can also help domestic companies overcome or circumvent unfavourable domestic international regulations. For example, the Singaporean government enjoys good relations with the governments of host countries, so the Singaporean government-linked companies (GLCs) can exploit these relationships to enter these markets (Zutshi and Gibbons, 1998; Pangarkar, 1998). Furthermore, according to Aggarwal and Agmon (1990) and the eclectic paradigm (Dunning, 1981, 1986)[91], the government acts as a supplier of information and technology in the early stages of the internationalisation process (Mahmood and Rufin, 2005). At this stage, when DOI is not high enough, companies would prefer political involvement from the home government because it "creates and protects profit opportunities for the corporations" (Aggarwal and Agmon, 1990, p.174). Therefore, the relationship between DOI and political involvement from the home government would be

[90] Henisz and Williamson (1999), Henisz (2000), Delios and Henisz (2003a, 2003b) discuss in detail the political risk of host countries.

[91] Please refer to Section 3.2 for more discussion concerning Aggarwal and Agmon (1990)'s contextual research and the eclectic paradigm (Dunning, 1981, 1986).

positive.

In addition, when DOI of domestic companies increases, the domestic economy it will become more sensitive to world market price and economic shocks (Keohane and Milner, 1996). Therefore, increasing internationalisation may undermine the autonomy and efficacy of government policy (Razin and Rose, 1994; Milner and Keohane, 1996a). In order not to accept the outcome passively, the government will start to intervene in the international strategy of a company. For example, the government in Taiwan does support companies in their international expansion but, for political reasons, imposes constraints on Taiwanese FDI to China (Sim and Pandian, 2003). Because of these restrictions, many Taiwanese firms invest in China via third countries. Additionally, a higher DOI (i.e. higher outward FDI) also results in higher capital mobility (Garrett, 1996). When it is easy to move capital offshore, the government will have stronger incentives to intervene in a company with a high DOI. By appointing directors to the board, the government can pursue policies that will increase rates of return on domestic investments (Garrett, 1996). For example, in order to guarantee that Taiwanese companies will bring profits back to Taiwan and that the headquarters of Taiwanese companies will stay in Taiwan rather than move to China, the Taiwanese government imposes constraints on the total amount of FDI in China[92]. In this way, the relationship between DOI of a company and political involvement will be positive. Based on these arguments, we hypothesise:

Hypothesis 8-2: The degree of internationalisation (t) is positively related to the subsequent intervention of governments (t+1).

The DOI is also associated with the intervention from financial institutions. Financial investors usually manage broad portfolios of foreign securities and actively engage in international equity markets (Norburn et al. 2000). These active institutional investors, however, encounter barriers regarding capital flow, institutional regulations,

[92] According to the Announcement No. 09304602280 made by the Ministry of Economic Affairs on 1st March, 2004 for small-medium enterprises (SMEs), the total amount invested in China cannot exceed NTD 80,000,000. For companies whose capitalisations exceed NTD 80,000,000 but are under NTD 5 billions, the total amount invested in China cannot exceed 40% of their capitalisation or NTD 80,000,000, whichever is greater.

and information asymmetry (Shleifer and Vishny, 1997; Tihanyi et al., 2003). Conversely, multinational companies (MNCs) do not have these restrictions and thereby can gain profit, which cannot be obtained by institutional investors in international markets (Doukas and Travlos, 1988). That is, investing companies with a high DOI can provide low risk and low cost international investments to institutional investors (Harris and Ravenscraft, 1991; Sanders and Carpenter, 1998; Tihanyi et al. 2003). Del Guercio and Tkac (2002) also demonstrate that international diversification by MNCs can be an attractive alternative for the clients of professional investment funds.

Moreover, some studies claim that international expansion provides companies with significant benefits, such as higher firm performance and higher sales (Ball and McMulloch, 1999; Hitt et al., 1994; Kim et al., 1993; Ruigrok and Wagner, 2003). Higher international expansion produces higher firm performance than domestic product diversification (Hitt et al., 1994; Kim et al., 1993; Ruigrok and Wagner, 2003). MNCs may also have higher returns than domestic companies (Hughes et al., 1975). Therefore, financial investors, such as banks, insurance companies, and blockholders, are likely to be interested in investing in companies with a higher DOI owing to the positive effects it has on shareholders' wealth (Tihanyi et al., 2003). Given these arguments, we hypothesise:

Hypothesis 9: The degree of internationalisation (t) is positively associated with the subsequent intervention of financial institutions (t+1).

Sullivan (1994) claims that a company's DOI reflects its dependence on foreign markets for customers, suppliers, and the geographical dispersion. The complexity of operating a company increases with the DOI (Roth and O'Donnell, 1996). Given the increased complexity, which results from a higher DOI, directors and executives are tasked with greater information-processing requirements (Roth and O'Donnell, 1996; Sanders and Carpenter, 1998). Therefore, a classic agency problem appears because it is more difficult for the board to monitor executives under a complex international environment (Zajac and Westphal, 1994; Sanders and Carpenter, 1998). According to

agency theory, the monitoring problem can be resolved through governance arrangements, such as more share-based compensation and a higher ratio of outside directors. By studying 258 American companies in 1992, Sanders and Carpenter (1998) also find that a higher DOI will result in higher CEO incentive compensation, larger top management teams, and the separation of CEO and the chairman. They conclude that a company's DOI will significantly influence its choice of corporate governance arrangements. Based on these prior studies, we hypothesise:

Hypothesis 10: The degree of internationalisation (t) is positively associated with the subsequent monitoring ability of a board (t+1).

4.3.2 Is the subsequent degree of internationalisation positively related to such intervention?

The question we ask in this section is whether the intervention of governments and financial institutions is positively related to the subsequent DOI. The fact that political involvement from the home country might push investment overseas has been noted in some contextual survey studies but received little statistical attention (Tallman, 1988). It is very common in East Asia for governments to play an active and supportive role in the international expansion of their domestic companies (Zutshi and Gibbons, 1998; Sim and Pandian, 2003; Van Hoesel, 1999; Dunning et al., 1998). For example, the Singaporean government played a supportive role in the promotion of outward foreign direct investment (FDI), particularly from the early 1990s (Zutshi and Gibbons, 1998; Pang, 1995; Tan, 1995). The Keppel Corporation[93], a Singaporean GLC, led a consortium of Singaporean companies to build the Singapore-Suzhou industrial town in Suzhou, China. The Singaporean government provided generous supports, such as tax incentives, finance schemes, and training, to foster the rapid development of local entrepreneurship in the regionalisation efforts.

[93] The Keppel Group is focused on three key businesses: Offshore and Marine, Property, and Infrastructure. The Keppel Group was one of the first Singaporean companies to spearhead investments abroad. The group's geographical presence extends as far as Germany, the US, the Middle East, Brazil and Nicaragua. Keppel is the Singapore MNC with the core competencies for enduring relationships, successful businesses and synergistic opportunities.

Given the example of the Keppel Corporation, GLCs in this stage are usually used as a tool to increase the DOI, which means that political involvement is positively related to DOI. We thereby hypothesise as follows.

Hypothesis 11-1: The intervention of governments (t) is positively related to a higher subsequent degree of internationalisation (t+1).

However, government support usually focuses on the macroeconomic dimension. It is not clear whether political involvement is positively related to firm-level internationalisation. Similar to the relationship between political involvement and subsequent firm performance, the argument that inefficient government ownership and intervention may jeopardise international expansion (i.e. result in a lower DOI) may also be supported. According to the grabbing hand model (Shleifer and Vishny, 1998), the government can have the power to control the strategy of a company and thereby make a profit or extract rents for the ruling party itself, instead of maximising the interests of shareholders. There exists the danger that the government will pursue its own interests at the expense of the shareholders. In order to maximise domestic votes, the strategy of increasing the firm-level DOI is not the primary goal because international expansion is more risky than operating a company domestically (Mascarenhas, 1989). For the government, the main goal of intervening in a company focuses on generating domestic votes, increasing jobs, and other political goals (Ball and MuCulloch, 1999), not increasing the firm-level DOI. Therefore, we hypothesise:

Hypothesis 11-2: The intervention of governments (t) is negatively related to subsequent degree of internationalisation (t+1).

In addition to political involvement, the intervention from financial institutions also plays an important role in DOI. Financial investors here include blockholders, banks, insurance companies, professional investment funds, pension funds and so on. Financial investors, who own a large ratio of a company's outstanding shares, may be able to "exert significant influence on the strategy and structure of a firm" (Sanders

and Carpenter, 1998, p. 167). Managers pursuing profits and growth opportunities should consider the support from various financial investors because "the confidence of these large investors may help managers to secure funds for costly overseas projects and thereby can significantly affect the success of international strategies" (Tihanyi et al., 2003, p.196).

Because of different interests, different financial investors may have different objectives (Bushee, 1998; Thomsen and Pedersen, 2000; Tihanyi et al., 2003). Based on the classification in Brickley et al. (1988), there are three kinds of institutional investors – pressure-resistant, pressure-sensitive, and pressure-indeterminate. Kochhar and David (1996) conclude that pressure-resistant investors (i.e. pension funds, mutual funds, and foundations) have a stronger influence on firm innovation than pressure-sensitive investors (i.e. insurance companies and banks). Prior studies suggest that understanding pressure-resistant investors is particularly important from the perspective of agency theory (Bushee, 1998, 2001). Therefore, prior studies seldom examine the influence of pressure-sensitive investors on the strategy of a company. In this thesis, however, we consider both pressure-resistant and pressure-sensitive institutional investors by using SEM which will be discussed in Chapter 5.

According to Tihanyi et al. (2003), institutional ownership, including professional investment fund ownership and pension fund ownership, has a significant and positive influence on DOI. By studying 197 companies drawn from the S&P 1500 in 1996, they found that one percentage point increase in pension fund ownership will result in 14% increase in DOI. Moreover, because of current or potential business transactions with a company, banks have an obligation to support the management's strategy financially (Tihanyi et al., 2003). Although banks are regarded as passive investors from this viewpoint (Davis and Thompson, 1994), they still supply financial support for companies undergoing international expansion. The main bank system in Japan is a very good example. In addition, the equity holdings of other financial institutions, such as insurance companies, also provide a 'safety net' for these companies (Tihanyi et al., 2003, p.199). Based on the arguments above, we

hypothesise:

Hypothesis 12: The intervention of financial institutions (t) is positively associated with subsequent degree of internationalisation (t+1).

Sanders and Carpenter (1998) conclude that a company's DOI will significantly influence its choice of corporate governance arrangements. At the same time, however, an effective board can also protect the interests of shareholders by ensuring that executives formulate good strategies (Tihanyi et al., 2003). Therefore, Sanders and Carpenter (1998) also imply that "the opposite causal chain may occur" (Sanders and Carpenter, 1998, p.174). According to their empirical results and implications, we can observe that a reinforcing spiral may occur between the monitoring ability of a board and a company's DOI. That is, a board with better monitoring ability is more appropriate for managing complexity and thereby tends to increase international expansion (i.e. increases the company's DOI).

Prior studies have indicated that the board and the composition of the top management team are involved in strategic changes (Johnson, Hoskisson, and Hitt, 1993; Pearce and Zahra, 1992; Sherman et al., 1998; Westphal, 1998; Tihanyi et al., 2000). Researchers have recently extended the examination of the influence of board composition on firm strategy by considering the DOI (Ellstrand et al., 2002). For example, outside directors are likely to support international diversification because of the potential to increase profits through, for example, increased sales. Tihanyi et al. (2003) examined 197 large American companies in 1996 and found that outside directors significantly increase DOI. When the ratio of outside directors increases one percentage point, DOI will increase by 12%. Sherman et al. (1998), however, find that board characteristics or composition is not significantly related to DOI. They also find that larger board executive committees[94] with greater tenure are

[94] According to Sherman et al. (1998, p.318), "The monitoring committees are primarily responsible for providing an objective, independent review of corporate actions. They often are composed of outside directors and include audit, compensation, and nominating committees. Management support committees primarily advise the board on major operating or strategic decisions.....The executive committee serves as a stand in for the full board during crises and also acts as a screening and review vehicle on major proposals before they come to the full board.... The executive committee appears to

associated with a higher DOI. Based on prior studies, we believe that the relationship between the monitoring ability of a board and DOI exists. Therefore, we hypothesise:

Hypothesis 13: The relationship between the monitoring ability of a board (t) and the subsequent degree of internationalisation (t+1) is positive.

In addition, Tihanyi et al. (2003) argue that board composition will moderate the relationship between DOI and institutional ownership. Institutional ownership in Tihanyi et al. (2003) includes professional investment funds and pension funds. Tihanyi et al. (2003) hypothesise that institutional ownership by professional investment funds and pension funds are both positively related to a company's DOI. They also find that the relationship between professional investment funds and DOI will be stronger for companies with a higher ratio of outside directors on the board (Sanders and Carpenter, 1998), whereas the relationship between pension funds and DOI will be stronger for companies with a higher ratio of inside directors on the board (Ellstrand et al., 2002; Hoskisson et al., 2002). Their findings imply that the board of directors can play an intermediate role in the relationship between financial institutions and DOI. In this thesis, we take the implicit relationship into consideration by using SEM. To focus on this implicit relationship, we hypothesise:

Hypothesis 14: The board of directors may moderate the relationship between DOI and the intervention of government and financial institutions.

4.4 Conclusion

This chapter establishes hypotheses concerning the relationship between different dimensions. There are two main topics in this chapter. The first topic is the examinations of the relationship between political involvement, the intervention of financial institutions, and firm performance. The second topic is the examinations of the relationship between political involvement, the intervention of financial

---

be controlled by inside firm managers."

institutions, and DOI. There are two questions that we try to answer relating to each topic.

Section 4.2 focuses on firm performance and discusses the relationship between political involvement, the intervention of financial institutions, and firm performance. The first question we try to answer in this topic is why there is intervention from the government and financial institutions. This question is discussed in Section 4.2.1. Based on prior studies, we hypothesise that these retired bureaucrats from government institutions and representatives from financial institutions are sent to the troubled companies in case of a financial crisis in order to exercise a monitoring function. Section 4.2.2 discusses the second question concerning the relationship between political involvement and firm performance, which is, is the intervention of governments and financial institutions positively related to the subsequent firm performance? Since the informal relationship between companies and governments/financial institutions can help companies to gain more support from them, the subsequent firm performance may be positively related to their intervention. Conversely, some researchers have considered this kind of intervention a major reason for inefficiency. Political involvement and the intervention of financial institutions may jeopardise the monitoring ability of the board of directors and thereby reduce firm performance. Hence, we have two different hypotheses for the relationship between the intervention of governments and financial institutions and subsequent firm performance.

Section 4.3 discusses the relationship between political involvement, the intervention of financial institutions, and DOI. The first question in Section 4.3.1 is whether DOI is related to subsequent intervention of government and financial institutions? As discussed in Section 3.2.2, political involvement and the role of a government will change with internationalisation and the economic development process. Therefore, the relationship between political involvement and DOI might be negative in countries with higher economic development and positive in countries with lower economic development (Aggarwal and Agmon, 1990). Moreover, prior studies claim that a higher DOI will produce higher firm performance. Therefore, financial

investors, such as banks and insurance companies, are likely to invest in companies with a higher DOI because of the positive effects of international expansion on shareholders' wealth (Tihanyi et al., 2003). The intervention of financial institutions may be positively associated with the subsequent DOI.

In Section 4.3.2, we try to answer the second question concerning DOI – are political involvement and the intervention of financial institutions related to the subsequent DOI? It is common for the governments in East Asia to play an activist and supportive role in international expansion of their domestic companies, which means that the intervention of governments may be positively associated with the subsequent DOI. However, it is not clear whether the relationship between political involvement and firm-level internationalisation is empirically positive. Similar to the relationship between political involvement and subsequent firm performance, inefficient government intervention may jeopardise international expansion (i.e. result in a lower DOI). Therefore, the relationship between political involvement and DOI may be positive or negative. Financial investors also play an important role in DOI because investment by them may secure funds for international expansion. Moreover, the equity holdings of financial institutions also provide a 'safety net' for companies (Tihanyi et al., 2003, p.199). Based on prior studies, the relationship between institutional ownership and DOI should be significant and positive (Tihanyi et al., 2003). Therefore, we hypothesise a positive relationship between the intervention of financial institutions and DOI.

This chapter also focuses on the relationship between the board of directors and firm performance/DOI. The board of directors may play an intermediate role in these factors. A board with good monitoring ability may fend off the intervention of government and financial institutions and thereby be positively related to subsequent firm performance or DOI. The intervention of government and financial institutions, however, may jeopardise the monitoring ability of a board and thereby supports the argument that such intervention will result in poor firm performance and a lower DOI. Given the importance of the board of directors, it is necessary to consider its intermediate and implicit role. Therefore, in this thesis we include the board of

directors as an intermediate factor in these relationships. Based on the hypotheses discussed in this chapter, we build the models for Japan and Taiwan in the following chapter. Chapter 5 introduces the data, the variables, and SEM.

Chapter Five
Methodology

5.1 Introduction

Structural equation modelling (SEM) is a commonly used methodology in psychology, sociology, and other humanities studies. It represents a hybrid of two statistical methods. The first method is factor analysis, which was developed for use in the disciplines of psychology and psychometrics and which gained enormous popularity in the 1950s and 1960s. Jöreskog's (1967) and Jöreskog and Lawley's (1968) studies created a maximum likelihood based approach for factor analysis. The maximum likelihood based approach allows researchers to test a hypothesis that a specified number of factors were presented to specify the intercorrelations among the variables. Based on the maximum likelihood approach, Anderson and Rubin (1956) and Jöreskog (1969) developed confirmatory factor analysis (CFA). In CFA, researchers first specify a number of factors, decide which factors are correlated and then statistically test the significance of a hypothesised model. Therefore, confirmatory factor analysis (CFA) is regarded as a priori-specified theoretical model.

The second method is simultaneous equation modelling, which is commonly used in the area of econometrics. Based on simultaneous equation modelling, Sewell Wright (1918, 1921, and 1934) developed the path analysis, which examines how the correlations between variables can be related to the parameters of a model as demonstrated by a path diagram. Generally, path analysis solves a set of simultaneous regression equations, which establish the relationships between variables based on hypotheses. Wright applied path analysis to problems of estimating demand and supply equations. Unfortunately, path analysis was neglected until econometricians reconsidered it in the 1950s "as a form of simultaneous equation modelling" (Schumacker and Lomax, 2004, p.5).

SEM, which combines confirmatory factor analysis (CFA) and path analysis, was based on the work by Jöreskog (1973), Keesling (1972), and Wiley (1973). Basic SEM consists of two parts: (1) the measurement part, which connects observed variables (i.e. measurement variables) with latent variables by using confirmatory factor analysis (CFA); (2) the structural part, which links latent variables with each other by using simultaneous equation modelling (Kaplan, 2000). The original approach was initially known as the JKW model and then as the linear structural relation model (LISREL) due to the development of the software program LISREL in 1973. Currently, SEM is one of the most popular statistical methodologies used in quantitative research, especially in psychology and is becoming increasingly popular in business and management. One of the modern developments of SEM has focused on the extension of new estimation methods to manage the non-normality problem. The basic assumption of SEM is that measurement variables must follow multivariate normal distribution. In many cases, the dichotomous, order-categorical, and continuous variables do not follow the normal distribution. These non-normal variables, which can be found in many management and financial studies, will result in biased results. The non-normality problem will be discussed in Section 5.4.5.

Based on the backgrounds of political involvement, corporate governance, and DOI in Japan and Taiwan introduced in Chapters 2 and 3, Chapter 4 builds hypotheses upon these dimensions. In this chapter, we will introduce SEM, the sample, and the variables used in this thesis. The sample and data sources are introduced in Section 5.2. In Section 5.3.1 and 5.3.2, we explain the calculation of the variables that are used in this thesis. Section 5.4 explains the theory of SEM and the problems that it may present. Section 5.5 provides a summary of this chapter.

5.2 Sample and Data

This thesis focuses on two countries that operate relational capitalism – Japan and Taiwan. For Japan, the sample comprises 203 Japanese companies from the Nikkei

225 index[95]. As there is no similar index in Taiwan that includes a comparable number of companies, 200 from all listed Taiwanese companies were chosen according to the highest capitalisation on 1st August, 2004 and data availability. For both countries, the research period is three years from 2001 to 2003. Table 5-1 presents the the industry distribution of the observations in Japan and Taiwan.

Table 5-1 The industry distribution of the observations in Japan and Taiwan
(A) Japan

Industry Code	Industry Classification	Total	%
13	Farming and Fishing	1	0.05
16	Mining	1	0.05
18-19	Construction	8	0.39
20-29	Foods	13	0.64
31-34	Textiles	10	0.49
38	Papers	4	0.20
40, 42, 44, 49	Chemicals	15	0.74
45	Pharmaceutical Industry	10	0.49
50	Oil	2	0.10
51	Rubber	2	0.10
52-53	Glass and Ceramics	6	0.30
54-56	Steels	4	0.20
57-58	Metals	10	0.49
61-64	Machinery	11	0.54
65-69	Electric appliance and Cable	24	1.18
70, 72	Heavy Industry	8	0.39
72	Automobiles	5	0.25
77	Instruments	5	0.25
80-81	Trading and Consumers' Goods Industry	8	0.39
82	Retail	6	0.30
83-85	Banks	8	0.39
86	Securities	4	0.20
87	Insurance	2	0.10
88	Real Estate	4	0.20
90-92	Transportation	12	0.59
93	Logistics	1	0.05
94, 97-99	Communication	8	0.39
95	Gas and Electricity	5	0.25
96, 97	Service Industry	3	0.15
79	Others	3	0.15
	Total	203	100
	Average firm size (total asset) (Unit: ln million USD)	23.67	
	Average (Total capital)/(Total assets) (%)	52.27	

[95] 21 companies were deleted from the sample because they did not have complete data or have been merged into a new company. The rule for deleting companies in Taiwan is the same as in Japan.

(B) Taiwan

Industry Code	Industry Classification	Total	%
11	Cement	3	1.51
12	Foods	2	1.01
13	Plastic	11	5.53
14	Textiles	5	2.51
15	Machinery	8	4.02
16	Electric appliance and Cable	1	0.50
17	Chemicals	8	4.02
18	Glass and Ceramics	1	0.50
19	Paper	4	2.01
20	Steel and Iron	7	3.52
21	Rubber	5	2.51
22	Automobiles	3	1.51
23-24	Electronics and Computers	94	47.24
25	Construction	6	3.02
26	Transportation	9	4.52
27	Tourism	1	0.50
28	Finance	17	8.54
29	Logistics	4	2.01
98-99	Others	11	5.53
	Total	200	100
	Average firm size (total asset) (Unit: ln million USD)	20.28	
	Average (Total capital)/(Total assets) (%)	64.18	

According to the classification of industry in Tokyo Stock Exchange and Taiwan Stock Exchange, there are 32 industries in Japan and 20 industries in Taiwan. From Table 5-1, we can observe that our Japanese sample includes 30 industries and the Taiwanese sample includes 19 industries, which means that our samples widely cover different industries in Japan and Taiwan.

In Taiwan, according to the regulations set by the Taiwan Stock Exchange Corporation (TSEC), a listed company must disclose its ownership structure, the ratio of outside directors and brief biographies of its directors in its annual report. By using the database – the Taiwan Economic Journal (TEJ) and FINASIA, we obtained financial data and data regarding political involvement, such as government ownership. The Taiwan Economic Journal (TEJ) was founded in April 1990, Taipei, Taiwan. It provides the data and information on financial market and company information in Taiwan and China. TEJ also acts as the Asian data provider for

DATASTREAM, Dialog, and QUICK (in Japan).

In Japan, however, most companies are not required to disclose a great deal of information to the public. They only have to be responsible to their financial supporters, i.e. the main banks and the government (Monks and Minow, 2004). Given the low disclosure transparency in Japan, which is discussed in Appendix 1, it is very difficult to obtain Japanese data by using annual reports alone. Fortunately, some private and official publishers publish some booklets containing information about the boards of directors in Japan. In addition to annual reports, we use three main sources of data that are published in Japanese. No single source captures the entire scope of Japanese boards but only a piece of the overall picture. Unfortunately, some sources are difficult to obtain before 2000 and thereby constrain our research period.

1. *Yakuin Shikihou* (Employee Report, 役員四季報) are published quarterly by *Toyo Keizai Shinposha* (東洋経済新報社). These two sources include financial data of listed companies. In addition to basic financial data, they also provide the names of directors, their career history, the universities from which they graduated, the year they entered the company, and the interlock conditions. Therefore, variables concerning board composition and the quality of directors are collected from this source.

2. *Nippon Kinyu Meikan* (Directory of Executives in the Japanese Finance Industry, 日本金融名鑑), published by *Nippon Kinyu Tsushinsha* (Japan Finance Press, 日本金融通信社). This three-volume book, published since the 1960s, contains detailed information about the composition of the boards of directors of all Japanese financial institutions including city banks, regional banks, second tier regional banks, long-term credit banks, trust banks, foreign banks and other financial institutions. This publication offers three advantages. First, it shows the careers of the board members since graduating from university. Thus, if the member was previously employed by the government, this information will be shown. Second, this book also lists every interlock relationship. All the positions

occupied by a director will be listed. This three-volume book Therefore, we collect directors' information of financial institutions through this three-volume book which provides a detailed picture of the relationships between Japanese banks and the government.

3. *Yukashoken Hokokusho* (Securities Report,有価証券報告書) is published annually by every Japanese company. It is the major source for this thesis. We obtained *Yukashoken Hokokusho* from the Japanese official website, EDINET (Electronic Disclosure for Investors' Network). *Yukashoken Hokokusho* is an annual security report. Unlike annual reports, which only provide limited and general information, *Yukashoken Hokokusho* provides detailed information concerning the board of directors, ownership structure, and the operation of the company. The variables regarding ownership structure and DOI are collected from this source.

In addition to the data sources mentioned above, we also used DataStream to collect financial data, such as ROE, ROA, and TSR. When there is a conflict between information which is available in multiple data sources, this thesis will use the formal reports published by companies.

5.3 Variables

SEM has a major advantage when dealing with concepts such as governance, board monitoring or institutional intervention. While these concepts have a clear meaning in the literature, they generally lack a unique or well-defined measure by which they can be quantified or gauged. SEM allows a group of variables to be associated with each underlying concept (e.g. 'internal governance'). While it is difficult to point to a single measure for a concept such as 'internal governance', it is far easier to specify a range of measures that, by general agreement, capture the notion of board monitoring. SEM also enables the relationships between these underlying but difficult-to-measure concepts to be quantified. The measurement variables discussed below are grouped

into five latent variables: internal governance (BOARD), financial institutions (INST), political involvement (GOV), firm performance (PERF), and the degree of internationalisation (DOI). Each of these main headings and their respective constituent measured variables will be discussed in turn.

(BOARD) - Internal governance: BDOWN; OUTSIDE; MANOWN; BD_Q.

In relational capitalism, retired government bureaucrats will simply be invited to work with public listed companies (Colignon and Usui, 2003). If the directors have a close relationship with the government and financial institutions, they will persuade the government and professional investors to dispatch representatives to the board and help the company solve financial problems. Therefore, the board of directors plays an important intermediary role between a company and the intervention of governments and financial institutions. Meanwhile, the board of directors also plays the role of monitoring CEO behaviour and firm performance. In order to evaluate the direct and indirect relationship between the board of directors and firm performance, this thesis includes several variables to measure its monitoring ability. In terms of internal governance, the percentage of board ownership (BDOWN) is included (Coles et al., 2001). With regard to board composition, the ratio of non-executive directors to the number of total directors (OUTSIDE) is also included. Also included is the fractional equity ownership by the CEO and his immediate family (MANOWN). The key consideration here is that as the ownership by the CEO and his immediate family increases, any actions taken by him may be oriented increasingly toward maximising the value of the company. That is, CEO ownership can align his interests with those of shareholders. Owing to the unavailability of data, the Japanese model does not include the MANOWN variable[96].

Bhagat and Black (2001) argue that outside directors have less professional business

[96] The Japanese corporate governance system is different from the Anglo-Saxon system. Japanese companies seldom use the titles of CEO, CFO, and COO (only a few companies have adopted the Anglo-Saxon system, such as SONY). All directors (*torishimariyaku*), including managing directors, executive directors, and advisory directors, act like a CEO. The demarcation among them is very ambiguous.

knowledge and lack information concerning the company, so adding outside directors may increase the board independence at the expense of sabotaging both the decision-making process and firm performance. Therefore, in addition to the variable OUTSIDE, the variable BD_Q is included to measure the quality of directors. The National Association of Corporate Directors guidelines (NACD, 1996) recommended that senior corporate executives and CEOs should hold no more than three outside directorships[97]. BD_Q captures the percentage of directors who occupy more than three executive or director positions in other companies (Perry and Peyer, 2005).

(INST) - Financial institutions: FINOWN; BANK_D; CROSS; BLOCK.

In addition to the government, the main bank and other *keiretsu* partners[98] will also appoint representatives to the board in order to help their troubled partner tackle financial problems. Banks play an extremely important role in corporate governance in Asia, especially in Japan. The notable feature of the Japanese corporate system is *keiretsu*, a pattern of cross-shareholding by affiliated companies including customers and suppliers. There is usually a dominant main bank in a *keiretsu* group. These main banks usually appoint some representatives to the boards to exercise the monitoring function. We analyse this dimension through four measurement variables. The first variable used to capture this phenomenon is financial ownership (FINOWN), which is measured by the ratio of shares held by financial institutions to total outstanding shares. Additionally, to take account of the number of bank-appointed directors on the board, these are expressed as a proportion of the total number of directors (BANK_D). Cross-shareholding ownership (CROSS) measures the ownership owned by other companies, and is computed as the ratio of cross-shareholding shares

[97] Some researchers believe that there is no prescriptive answer to the ideal number of directorships that a person should hold. The number of directorships that a person accepts should be limited only by that person's capacity to properly carry out the obligations required of each directorship on behalf of the shareholders. Moreover, each individual directorship brings valuable experience and additional business insights (Ferri et al., 2003).

[98] Japanese companies interlink each other through share purchases to form horizontally-integrated alliances, so-called *keiretsu*. Companies in the same *keiretsu* also supply one another, making the alliances vertically-integrated to some extent as well. The *keiretsu* is usually centred on one main bank, which lends money to the member companies and holds equity of these companies. Each main bank has control over the member companies in the *keiretsu* and acts as a monitoring entity as well as an emergency bail-out entity.

to total outstanding shares. These cross-shareholders include affiliated companies and other companies that belong to the same *keiretsu* group. Finally, as in the study by Kang and Shivdasani (1995), the percentage of ownership accounted for by the top ten blockholders is captured in the variable BLOCK. By virtue of the magnitude of their investments and the threat of selling large blocks of shares if the company fails to provide an acceptable return, they may have influence on managerial behaviour.

(GOV)- Political involvement: GOVOWN; GOV_I; GOV_APP; GAKUBATSU.

The most important latent variable in this thesis is political involvement (GOV). Powerful government intervention has maintained strong control of many Japanese and Taiwanese companies. The main task of this thesis is to examine why there is intervention of government and whether the existence of the close relationship between the companies and government jeopardises firm performance and DOI in Japan and Taiwan.

The subject of political involvement is always sensitive. The government can intervene in the operation of companies in many different ways, such as the placement of government appointed directors on the board and government ownership. Furthermore, governments in different countries usually have different methods of intervention in the operation of a company. For example, governments in Asian countries usually use government ownership and appointed directors on boards to control the operation of the company. According to our calculation, at the end of 2004, the government ownership of shares across all Taiwanese listed companies amounted to 2.21% of the total number of listed shares, and the weighted-market-value of government ownership amounted to 12.34%. The following part will explain these different variables used by prior studies and introduce the variables used in this thesis.

Most studies concerning the relationship between the government and the operation

of a company use various variables for empirical analyses. Among these variables, government ownership is the most commonly used. Many studies discuss how government ownership affects other variables, such as firm performance (e.g. Boardman and Vining, 1982, 1989; Dewenter and Malatesta, 2001; Sun, Tong and Jing Tong, 2002). In order to intervene in the operation of a company, the government may assume a high level of ownership. In this way, the government can occupy a fixed number of seats on the board and thereby be involved in the decision-making process. Compared to other variables, government ownership is also the most unbiased variable because there is no subjective judgement[99]. Furthermore, data regarding government ownership can be easily obtained from various databases and the financial statements of companies.

In addition to government ownership, with regard to the government appointed directors, the system of *amakudari* is the most famous example in Japan (Kuji, 1998). The system of *amakudari* in Japan means that some retired officials from Japanese monetary authorities, such as the Ministry of Finance (MoF) and the Bank of Japan (BoJ), enter the boards of public listed companies. Troubled banks may attempt to employ retired officials, so-called *amakudari*, from MoF (the Ministry of Finance) and BoJ (the Bank of Japan) because they can persuade the relevant regulators to allow them to take more loans and more investment risks (Van Rixtel and Hassink, 2002; Horiuchi and Shimizu, 2001). The system can establish an informal network between the supervisory authorities and the private sector. Moreover, the private sector can buy influence from the government through employing retired bureaucrats. Van Rixtel and Hassink (2002) and Horiuchi and Shimizu (2001) examine the relationship between firm performance and the number of appointed ex-bureaucrats. Both of them conclude that the system of *amakudari* is not only used as a reward system but also used to build an informal network between the public sector and the private sector in Japan. Troubled banks may attempt to buy influence from the

[99] For example, Agrawal and Knoeber (2001) analyse the backgrounds of directors of American manufacturing firms and thereby determine whether they have political experience or legal experience. The problem that arises is what the criteria are of determining a person having political experience or legal experience. Does a director have political experience if he was previously a Member of Parliament (MP)? Does a director have political experience if he majors in political science at university? The criteria are quite ambiguous.

monetary authorities, i.e. the MoF and BoJ, to allow them to expand their risk-taking activities. This kind of behaviour may jeopardise the monitoring ability of the monetary authorities and thereby cause an unstable monetary system.

In addition to government ownership and government appointed directors, Van Rixtel and Hassink (2002) also use the variable GAKUBATSU to represent the existence of specific relationships between the MoF/BoJ and the banks in the private sector. The variable GAKUBATSU displays the human-network between the MoF/BoJ and public banks. GAKUBATSU is the ratio of the number of graduates from the 'Big Five' to the total number of executives in the highest board positions[100]. If banks have a large number of graduates from the five universities in their highest executive positions, it might be easier to build relationships with the monetary authorities.

Following prior studies, this thesis includes four variables to measure political involvement. Due to data limitations, we focus on the variables that can be collected from databases and financial reports. The first variable included in this group is government ownership (GOVOWN), which is measured by the ratio of government shares to total outstanding shares. The second variable is the number of shareholdings that represent government-linked agencies (GOV_I). This study does not use the ratio of shareholdings that represent government-linked agencies because the number of total shareholders is very large. The ratio of government-linked agencies to the number of total shareholders would be extremely small and almost meaningless. Furthermore, most general shareholders do not participate in the operation of the company actively. Some of them only appear in annual shareholder meeting (AGM) for a short time. They do not have the critical power and intention to influence the operation of a company. Although the number of government-linked agencies is small, all of them represent the government and pay attention to the share price and the operation of the company. Based on this argument, this thesis uses the absolute value of government-linked agencies to measure one dimension of political involvement.

[100] Please refer to Section 2.2.1 for the discussion of the system of *gakubatsu*.

Another key variable is the number of government appointed directors (GOV_APP) (Van Rixtel, 2002). This variable measures the phenomena of *amakudari* and *shukko*[101]. Here, the two types of director are combined into the same measurement variable. Whether a director is a retired bureaucrat (i.e. *amakudari*) or an incumbent government official who is temporarily on loan to a company (i.e. *shukko*), he/she is regarded as a director with a political background. GOV_APP is the ratio of the number of directors who possess such political backgrounds to the total number of directors on a board.

To measure the additional phenomenon '*gakubatsu*', which establish strong support and group consciousness within and between large Japanese companies (Van Rixtel, 2002; Colignon and Usui, 2003), the variable GAKUBATSU is constructed as the ratio of the number of graduates from the five most prestigious universities in Japan (the so-called 'Big five') to the total number of directors in a board. Because of the absence of a similar phenomenon in Taiwan, the Taiwanese model does not include this variable.

(PERF) - Firm performance: TSR; ROE; ROA.

Three alternative variables are used to measure firm performance: total shareholder return (TSR), return on equity (ROE), and return on assets (ROA). We use these three as the proxy variables to measure firm performance from the accounting and market dimension. TSR is the total return on shares assuming dividends are reinvested. In this thesis, ROE is computed as the net income divided by the shareholder's equity, and ROA is calculated by dividing a company's annual earnings by its total assets.

(DOI) - The Degree of Internationalisation: FOROWN; FSTS; FATA; FSE.

[101] For detailed information concerning *amakudari* and *shukko*, please see Section 2.2.1 and Section 2.3.1.

In order to measure DOI in a clear and quantitative way, many prior studies try to build an aggregate index that is composed of several variables. A review of the recent literature reveals four main indices used in internationalisation research: (1) the Index of Transnationality (TNi); (2) the Transnational Activity Spread Index (TASi); (3) the Degree of Internationalisation Scale (DOI); and (4) the Two Dimensions of Internationalisation (TDI). When developing an index, the key consideration is whether the individual factors are complementary enough so that they do not conflict with each other in combination. For example, it may not be appropriate to sum up the ratio of foreign sales and the number of foreign listed exchanges. An explanation of how each index is calculated will now follow.

The Index of Transnationality (TNi) was designed by the United Nations Conference on Trade and Development (UNCTAD) to rank the largest transnational companies (TNCs). UNCTAD ranks the 100 biggest transnational companies (TNCs) around the world and publishes the results annually in the World Investment Report. The Index of Transnationality (TNi) is calculated as the average of three different ratios – the ratio of foreign assets to total assets (FATA), the ratio of foreign employment to total employment (FETE), and the ratio of foreign sales to total sales (FSTS). Since the index is the average percentage of three different ratios, the index ranges from 0 to 100%.

$$TNi = \frac{FATA + FSTS + FETE}{3} \times 100\%$$

The Index of Transnationality (TNi) designed by UNCTAD, however, assumes that the three ratios can be grouped into the same index. The amount of foreign sales is an accounting concept, which can measure whether the operation of a company is mainly based on exports, but foreign employment and foreign assets are not included. If we rank these TNCs on the basis of the three ratios separately instead of on the index, we will find that the rank of 100 TNCs fluctuates considerably. For example, in 1997, on the basis of the ratio of foreign assets (FATA), General Electric was in

the top position (FATA=32.04%) and the Ford Motor Company was in the second position (FATA=26.33%).

However, the ratios of foreign employment (FETE) for General Electric and the Ford Motor Company are lower than other TNCs. Although General Electric and the Ford Motor Company are ranked the first and the second respectively on the basis of the ratio of foreign assets (FATA), the TNi of General Electric and the Ford Motor Company are not so high. In 1997, the TNi of General Electric was 33.10%, ranking the 84^{th,} and the TNi of the Ford Motor Company was 35.14%, ranking the 80th. It does not mean that General Electric and the Ford Motor Company are less international than the Gillette Company (ranking the 28th in 1997) or the Thomson Corporation (ranking the 3rd in 1997). The combination of different variables is questionable. Although the individual variable in the Index of Transnationality (TNi) can demonstrate some dimensions of DOI of a company, it may not be appropriate to add up these three variables directly into the same index. Therefore, the Index of Transnationality (TNi) designed by UNCTAD does not seem to be complete enough to measure DOI sufficiently.

There is another defect of the Index of Transnationality (TNi). According to Ietto-Gillies (1998), it ignores the spread of foreign activities. That is, it distinguishes between local and foreign activities but does not consider how widely the foreign activities are spread. (Hassel et al., 2003; Dorrenbacher, 2000). Based on this argument, she designs a minor index – the Network-Spread Index (NSi) – which is calculated by dividing the number of foreign countries where a company has branches by the total number of countries worldwide in which there is inward stock of foreign direct investment (FDI) minus 1 (in order to exclude the home country). This Network-Spread Index (NSi) shows international diversification but it does not take into account the amount of real foreign activities, such as foreign sales and foreign assets. Therefore, she combines the Network-Spread Index (NSi) and the Index of Transnationality (TNi) to capture a more complete picture of DOI. This new index 'Transnational Activity Spread Index' (TASi) is calculated by multiplying the Network-Spread Index (NSi) by the Index of Transnationality (TNi).

$TASi = TNi \times NSi$

Multiplying the Network-Spread Index (NSi) by the Index of Transnationality (TNi) can capture three more dimensions of DOI, but the index NSi is conceptually different from the ratio of foreign sales, the ratio of foreign assets, and the ratio of foreign employees. Therefore, Hassel et al. (2003) argues that it is even less convincing to multiply this factor by the average of the other three other individual factors instead of using NSi as a single factor in measuring DOI.

Sullivan (1994) develops the third index – the Degree of Internationalisation Scale (DOI). He points out that there are three different dimensions to measure DOI – performance, structure, and attitude. Unlike UNCTAD, which selected three individual factors according to its assumptions that these factors can present DOI, Sullivan (1994) chooses nine factors first and then uses factor analysis and item-total analysis to test whether these factors can measure DOI sufficiently. According to the empirical results, five good factors have been identified. The index is composed of the following five indicators: (1) the ratio of foreign sales to total sales (FSTS); (2) the ratio of foreign assets to total assets (FATA); (3) the number of overseas subsidiaries divided by the total number of subsidiaries (OSTS); (4) the international experience of top managers (TMIE); and (5) the psychic dispersion of international operations (PDIO). The fourth factor, TMIE, is measured as the cumulative duration of top managers' international working time divided by the total years of their working experience. The fifth factor, PDIO, is calculated by the dispersion of the subsidiaries of a firm among the ten psychic zones of the world, which is defined by Ronen and Shenkar (1985)[102]. The DOI is equal to the sum of the five ratios. The

[102] According to note 5 in Sullivan (1994, p.340), "Ronen and Shenkar's (1985) meta-analysis of cross-cultural studies decomposed the world into ten psychological zones – Anglo, Germanic, Nordic, Near Eastern, Arab, Far Eastern, Latin American, Latin European, Independent, and Other. We used these categories as a template to access the psychic distribution of each firm's subsidiaries. For instance, if a company Y reported the following distribution of units,

National Site of Subsidiary	Psychic Zone
1. Austria	1. Germanic
2. Canada	2. Anglo
3. Belgium	3. Latin European
4. Chile	4. Latin American

range of the value for a company is from 0.0 (no international involvement) to 5.0 (total international involvement). For example, CPC is top in the DOI at 3.13 and IBM occupies the fourth position at 2.91. According to Ramaswamy et al. (1996), since different variables may have different effects and attributes on the operation of a company, combining these variables with different characteristics into the same index might be theoretically suspect. Although the DOI has been criticised, it is still the index that is most often used.

Based on the index developed by Sullivan (1994), Hassel et al. (2003) devise the fourth index, which they call Two Dimensions of Internationalisation (TDI), on the basis of 51 German companies. Due to the drawback of combining different factors into the same index, they decide to separate the real dimension and the financial dimension. The real dimension refers to the share of foreign activities of companies, such as sales, assets, and employees. The financial dimension indicates the orientation towards international capital markets. The real dimension includes three individual factors – the ratio of foreign sales to total sales (FSTS), the ratio of foreign employment to total employment (FETE), and the degree of geographical spread of activities (SPREAD). Since the numbers of foreign subsidiaries vary highly in annual reports, they group the number of countries in which companies operate into three groups: high (company operates in more than 16 countries), middle (company operates in 7 to 16 countries), and low (company operates in less then seven countries).

Hassel et al. (2003) is the first study that deals with the financial dimension in the field of measuring DOI. In order to measure the extent of the participation of international capital, they use three factors to measure this dimension – the ratio of foreign ownership (FOTO), the number of listings in foreign stock exchanges (FSE), and the accounting standard (AS). The accounting standard (AS) factor is on an ordinal scale. It examines whether companies use German accounting rules

---

5. Hong Kong	5. Far Eastern
6. Greece	6. Near Eastern
7. Bermuda	7. Other

then it was credited with operating a subsidiary in the corresponding zone, and assigned a score of 70%."

according to German commercial legislation or whether they use international accounting standards, such as the US General Accepted Accounting Principles (US-GAAP) or the International Accounting Standards (IAS).

Instead of combining the degree of real and financial internationalisation, they decided to construct two indices by calculating the mean of the unweighted z-scores because it is difficult to find a way to combine unstandardised values. Therefore, the range of real internationalisation (REAL) and financial internationalisation (FINANCE) is from 0 to 1.

$$REAL = \frac{zFSTS + zFETE + zSPREAD}{3}$$

$$FINANCE = \frac{zFOTO + zAS + zFSE}{3}$$

They find that the correlation coefficient between REAL and FINANCE is 0.41, which is low enough to assume that these two indices might indeed catch two distinct dimensions of DOI of a company. The separation of the real and the financial dimensions indeed points to a way to capture new dimensions of measuring DOI. This index, however, might only work for German or continental European companies because companies in the US or the UK have long used the US General Accepted Accounting Principles (US-GAAP) or the International Accounting Standards (IAS).

To sum up, due to the changing nature of international business, it is difficult to find a uniform measurement of DOI. First, it remains questionable whether these factors can be combined into one index. Combining various factors into one index might distort the analysis (Hassel et al., 2003). Second, the choice of factors remains controversial. Third, some factors are seriously sensitive to the size of a company, but others are not (Hassel et al., 2003). For example, big international companies based in small countries may have a higher ratio of foreign assets and foreign sales compared to companies based in big countries.

Based on the argument in Hassel et al. (2003) and other studies concerning the measurement of DOI, we also use multiple variables to measure the two dimensions of DOI. Due to data availability, similar to Hassel et al. (2003), in the financial dimension we include the percentage of foreign ownership (FOROWN) and the number of listings in foreign stock exchanges (FSE) as variables. In the real dimension, we include the ratio of foreign sales to total sales (FSTS) and the ratio of foreign assets to total assets (FATA). By using SEM, we do not need to combine or sum up these variables to create an index[103]. Therefore, we can use these variables to measure DOI without summing up variables with different scales.

The measurement variables discussed above are grouped into five latent variables: internal governance (BOARD), financial institutions (INST), political involvement (GOV), firm performance (PERF), and the degree of internationalisation (DOI). Table 5-1 presents the composition of each latent variable.

Table 5-2 The composition of latent variables

Latent Variable	Measurement Variables
Internal governance (BOARD)	1. the ratio of directors' shares to total outstanding shares (BDOWN) 2. the ratio of outside directors (OUTSIDE) 3. the fractional equity ownership by the CEO and his immediate family (MANOWN) 4. the percentage of directors who occupy more than three executive or director positions in other companies (BD_Q)
Financial institutions (INST)	1. the ratio of financial institutions' shares to total outstanding shares (FINOWN) 2. the ratio of the number of bank representatives on the board to the number of total directors (BANK_D) 3. the ratio of cross-shareholding shares to total outstanding shares (CROSS) 4. the percentage of ownership accounted for by the top ten blockholders (BLOCK)
Government (GOV)	1. the ratio of government shares to total outstanding shares (GOVOWN) 2. the number of shareholdings which represent government-linked agencies (GOV_I) 3. the ratio of the number of directors who possess political backgrounds to the total number of directors on a board (GOV_APP) 4. the ratio of directors who graduate from the Big-Five to the total number of directors on a board (GAKUBATSU)
Firm performance (PERF)	1. total shareholder return (TSR) 2. return on equity (ROE) 3. return on asset (ROA)

[103] For the discussion concerning the methodology, SEM, please refer to Section 5.4.

The degree of internationalisation (DOI)	1. the ratio of foreign investors' shares to total outstanding shares (FOROWN) 2. the ratio of foreign sales to the total sales (FSTS) 3. the ratio of foreign assets to the total assets (FATA) 4. the number of listings in foreign stock exchanges (FSE)

5.4 Structural Equation Modelling

5.4.1 Model Specification

SEM is used to test the hypotheses and to calculate path coefficients. Structural equation modelling has a major advantage when dealing with concepts such as governance, board monitoring or institutional intervention. While these concepts have a clear meaning in the literature, they generally lack a unique or well-defined measure by which they can be quantified or gauged. SEM allows a group of variables (so-called measurement variables, MVs) to be associated with each underlying concept (e.g. 'internal governance'). While it is difficult to point to a single measure of a concept such as 'internal governance', it is far easier to specify a range of measures that, by general agreement, capture the notion of board monitoring. SEM also enables the relationships among these underlying but difficult-to-measure concepts to be quantified. These difficult-to-measure concepts are called latent variables (LVs) in SEM. By using LVs and MVs, which will be introduced in the following, SEM can help researchers build more complete and complex models. This section introduces four important steps in SEM:

(1) Model specification
(2) Model identification
(3) Parameter estimation
(4) Model fit evaluation

In a general regression framework, there are dependent variables and independent variables. In SEM, there are two kinds of variables: LVs and MVs. LVs are concepts that cannot be directly observed and measured and hence are measured by a set of MVs that we can directly observe from tests, surveys, and interview. For example,

confidence is a latent variable that represents a psychological construct. We use MVs to define or infer LVs. Therefore, when using SEM to analyse causality, instead of categorising variables into dependent and independent variables, the set of variables in a given model includes MVs and LVs. MVs serve as approximate measures, or indicators of LVs. It is advantageous to use SEM in measuring DOI because the concept of DOI is very vague. There are many different proxy variables that can evaluate DOI. By using SEM in this thesis, we can include several possible proxy variables to represent the DOI. SEM also categorises variables into two other groups – endogenous variables and exogenous variables. Endogenous variables are variables influenced by any other variables in the model. Exogenous variables are variables that affect other variables but are not themselves affected by other variables. Including the categories of MVs and LVs, we can classify variables in SEM into four different groups – endogenous MVs, exogenous MVs, endogenous LVs, and exogenous LVs.

Given a set of MVs and LVs, SEM will constitute a pattern of linear relationships between these variables. Within the model, there are two types of relationships: direct and indirect. A direct relationship represents a linear direct relationship from one LV to another LV, whereas an indirect relationship is the linear effect of a latent variable that goes through one or more intervening, intermediate, or mediating latent variables (Hoyle, 1995).

The initial model is formulated by researchers prior to estimation and is built on the basis of the theory and hypotheses. No analysis can be done until the researcher has specified a model of the relationships between the variables. That is, SEM is one statistical skill used to test a prior theoretical model. SEM is a confirmatory statistical skill rather than an explanatory statistical skill (Chiou, 2004). Model specification involves "determining every relationship and parameter in the model that is of interest to researchers" (Schumacker and Lomax, 2004). This is the most difficult part of SEM (Cooley, 1978).

A given model is properly specified when the true (population) variance-covariance

matrix is deemed consistent with the estimated variance-covariance matrix that is properly reproduced by the hypothesised theoretical model. The goal of researchers is to determine the best possible model which generates the estimated variance-covariance matrix. That is, the researchers' goal is to find a model which most closely fits the true variance-covariance matrix. In other words, the researchers must find a model that can minimise the difference between the estimated variance-covariance matrix and the true variance-covariance matrix. If the true model is not consistent with the hypothesised theoretical model, then the hypothesised theoretical model is misspecified. The exclusion or inclusion of variables can result in a misspecified hypothesised theoretical model. Therefore, hypotheses development is very important in SEM. To sum up, a structural equation model is based on several hypothesised linear relationships among a set of LVs, which are measured by several MVs. After constructing the hypothesised model, an important but difficult issue in SEM is model identification.

5.4.2 Model Identification

In SEM, the object is to minimise the difference between the estimated variance-covariance matrix and the true variance-covariance matrix. It is important to solve the identification problem prior to the estimation of parameters. In this step, we ask the following question: Based on the sample data and the theoretical model, can we find a unique set of parameter estimates (Schumacker and Lomax, 2004)?

For each free parameter, it is necessary that at least one algebraic solution can be found to express it as a function of estimated variances and covariances. There are three levels of model identification. The classification of levels depends on the amount of information supplied by the estimated variance-covariance matrix for uniquely estimating the parameters in the model. If all parameters are uniquely determined because there is just enough information in the estimated variance-covariance matrix, the model is called 'just-identified'. If there are more equations than unknown independent parameters, that is, more than one way to

estimate a parameter, the model is called 'over-identified'. When there is not enough information to have parameters determined uniquely, that is, one or more parameters can not be uniquely determined, the model is called 'under-identified'. When a model is under-identified, the parameter estimates are not reliable because the degrees of freedom for the model are zero or negative. Such a model, however, can be identified if additional constraints are added. We can obtain parameter estimates for a just-identified or over-identified model.

Bollen (1989) uses the numbers of data point (DP) and the number of parameters to determine the model identification, the so-called 't-Rule'. An identified model must conform to the following equation:

$$t \leq \frac{1}{2}(p+q)(p+q+1) = DP$$

where t is the number of free parameters that are estimated in the model, p is the number of endogenous MVs, q is the number of exogenous MVs, and (p+q) is the total number of measurement variables.

The criteria are as follows:

1. When t<DP, the model is over-identification.
2. When t=DP, the model is just-identification.
3. When t>DP, the model is under-identification.

We can find parameter estimates for a just-identification and an over-identification model but not an under-identification model. Most of SEM computer programs provide a check of identification during estimating parameters. In this thesis, we use LISREL 8.7 as the analysis software. A just-identification model, the so-called saturated model, can always find a set of perfectly fitted parameters, thereby making it meaningless to assess model plausibility by evaluating goodness of fit. Models with over-identified parameters cannot fit data perfectly, therefore the main task in SEM is to find a model which fits the observed data as perfectly as possible. There

are many possible parameters that can structure the model and obtain path coefficients. We must choose the best one by comparing the goodness-of-fit indices. In this way, finding a good fit would be meaningful in SEM (Hoyle, 1995).

Another important issue in SEM is scaling. In SEM, LVs are measured by several MVs. As a LV is not really an observed variable, we must give it a specific scaling. The first possible method is to set the variance of one LV equal to unity, which means that the unit of the LV whose variance equals unity is the standard. Or, in the case of several MVs that measure one LV, we can set the path coefficient of a given MV equal to unity. Within each group the strongest connection is assigned the unit value 1.0 (Schumacker and Lomax, 2004). Hence, the unit of the estimated LV is the same as the unit of the MV whose path coefficient is set to unity. Both of the two methods can be used to scale LVs. When the LV is an endogenous LV that is measured by other LVs, it is better to use the second method. In order to unify the scaling method, we use the second method, which assigns the unit value 1.0 to the strongest connection within each latent group because there is one endogenous LV in this thesis.

5.4.3 The Methods of Estimating Parameters

The core procedure in SEM is parameter estimation. The main task in SEM is to determine a set of parameters that can minimise the difference between the estimated variance-covariance matrix and the true (population) variance-covariance matrix from which a sample has been drawn. The basic concept of how to obtain the estimated variance-covariance matrix is as follows.

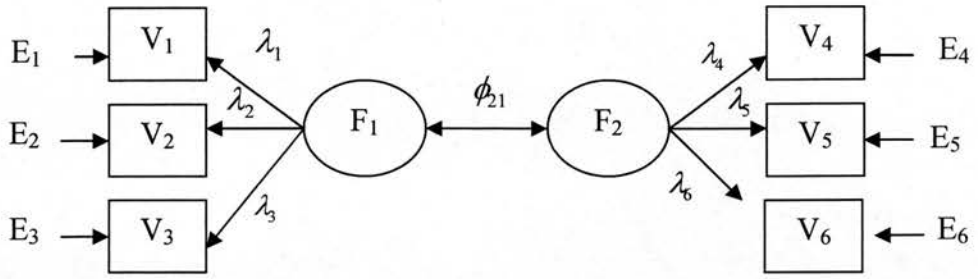


Figure 5-1 A SEM model with two latent variables

Figure 5-1 is a typical model constructed by two LVs (F_1 and F_2) and six MVs (V_1-V_6). From Figure 5-1, we know that:

$$V_1 = \lambda_1 * F_1 + E_1$$
$$V_2 = \lambda_2 * F_1 + E_2$$

Then, we can obtain,

$$\begin{aligned} Cov(V_1, V_2) &= Cov(\lambda_1 F_1 + E_1, \lambda_2 F_1 + E_2) \\ &= \lambda_1\lambda_2 Cov(F_1, F_1) + \lambda_1 Cov(F_1, E_2) + \lambda_2 Cov(F_1, E_1) + Cov(E_1, E_2) \\ &= \lambda_1\lambda_2 Cov(F_1, F_1) \\ &= \lambda_1\lambda_2 \end{aligned} \quad (5.1)$$

There are three hypotheses that have to be satisfied before obtaining (5.1). First, the covariance between any two residuals is zero. Second, the covariance between residuals and LVs is zero. Finally, the variance of F_1 is equal to unity. Based on the three assumptions, we can subsequently obtain (5.2) and (5.3).

$$\begin{aligned} Cov(V_1, V_4) &= Cov(\lambda_1 F_1 + E_1, \lambda_4 F_2 + E_4) \\ &= \lambda_1\lambda_4 Cov(F_1, F_2) + \lambda_1 Cov(F_1, E_4) + \lambda_4 Cov(F_2, E_1) + Cov(E_1, E_4) \\ &= \lambda_1\lambda_4 Cov(F_1, F_2) \\ &= \lambda_1\lambda_4\phi_{21} \end{aligned} \quad (5.2)$$

$$\begin{aligned} Var(V_1) &= Cov(\lambda_1 F_1 + E_1, \lambda_1 F_1 + E_1) \\ &= \lambda_1^2 Cov(F_1, F_1) + \lambda_1 Cov(F_1, E_1) + \lambda_1 Cov(E_1, F_1) + Cov(E_1, E_1) \\ &= \lambda_1^2 Var(F_1) + Var(E_1) \\ &= \lambda_1^2 + \theta_1 \end{aligned} \quad (5.3)$$

where ϕ_{21} is the covariance of F_1 and F_2. θ_1 is the variance of E_1.

Based on Figure 5-1 and the calculation introduced above, we can obtain the estimated matrix, $\Sigma(\theta)$. When elements in matrix $\Sigma(\theta)$ (the estimated variance-covariance matrix) minus the element in matrix S (the true variance-covariance matrix) equal zero, the perfect model is produced.

$$\Sigma(\theta)=\begin{vmatrix} \lambda_1^2+\theta_1 & & & & & \\ \lambda_1\lambda_2 & \lambda_2^2+\theta_2 & & & & \\ \lambda_1\lambda_3 & \lambda_2\lambda_3 & \lambda_3^2+\theta_3 & & & \\ \lambda_1\lambda_4\phi_{21} & \lambda_2\lambda_4\phi_{21} & \lambda_3\lambda_4\phi_{21} & \lambda_4^2+\theta_4 & & \\ \lambda_1\lambda_5\phi_{21} & \lambda_2\lambda_5\phi_{21} & \lambda_3\lambda_5\phi_{21} & \lambda_4\lambda_5 & \lambda_5^2+\theta_5 & \\ \lambda_1\lambda_6\phi_{21} & \lambda_2\lambda_6\phi_{21} & \lambda_3\lambda_6\phi_{21} & \lambda_4\lambda_6 & \lambda_5\lambda_6 & \lambda_6^2+\theta_6 \end{vmatrix} \quad (5.4)$$

The process of estimating parameters involves the use of a particular method to minimise the difference between $\Sigma(\theta)$ and S. The three main methods used in estimating the parameters are ULS (unweighted least squares), GLS (generalised least squares) (Aitken, 1934; Jöreskog and Goldberger, 1972), and ML (maximum likelihood) (Koopmans, Rubin and Leipnik, 1950). The most common method in parameter estimation is ML, which is suggested by Koopmans, Rubin, and Leipnik (1950). Jöreskog (1973) applies this method in SEM. In this thesis, we also use ML to be the parameter estimation method. The equation for the ML method is as follows:

$$F_{ML} = \log|\Sigma(\theta)| - \log|S| + tr(S\Sigma(\theta)^{-1}) - \rho \quad (5.5)$$

ρ is the number of measurement variables (MVs), S is the true (population) variance-covariance matrix and $\Sigma(\theta)$ is the estimated variance-covariance matrix. This method provides a guideline to minimise the difference between the true (population) variance-covariance matrix (S) derived from the sample and the

variance-covariance matrix ($\Sigma(\theta)$) derived from the hypothesised model.

There are several statistical properties of parameter estimates in the ML method (Hoyle, 1995; Chiou, 2004).

1. The parameter estimates are asymptotically unbiased

   When E [$\hat{\theta}$] = θ for all possible values of θ, such an estimator is unbiased. If there is no unbiased estimator, we look at asymptotic properties. Asymptotically unbiased is defined as Bias ($\hat{\theta}$) $\rightarrow$ 0 when n$\rightarrow \infty$.

2. The parameter estimates are asymptotically efficient.

   Efficiency relates to the variance of an estimator rather than its mean. The smaller the variance, the more efficient the estimator is. We define the mean square error (MSE) to be $MSE(\hat{\theta}) = E[(\theta - \hat{\theta})^2]$. Assume that there are two different estimators, $\hat{\theta}_1$ and $\hat{\theta}_2$, then $\hat{\theta}_1$ is better than $\hat{\theta}_2$ if MSE($\hat{\theta}_1$) $\leq$ MSE($\hat{\theta}_2$) for all possible values of θ. If we take all unbiased estimators of θ and find that $\hat{\theta}$ is the one with the smallest variance, then it is the minimum variance unbiased estimator (MVUE) of θ. When $\hat{\theta} \rightarrow$ MVUE ($\hat{\theta}$) as n$\rightarrow \infty$, then it is asymptotically efficient.

3. The parameter estimates are asymptotically consistent.

   If $\hat{\theta}$ is asymptotically unbiased and its variance$\rightarrow$0 as n$\rightarrow \infty$ then $\hat{\theta}$ is consistent as an estimator of θ. $\hat{\theta}$ is consistent $\Leftrightarrow$ P ($|\hat{\theta} - \theta| > \varepsilon$)$\rightarrow$0 as n$\rightarrow \infty$, for all ε. We can write this in shorthand as plim($\hat{\theta}$) = θ.

To satisfy these properties, the MVs must be continuous and have a multivariate normal distribution. When the assumption is not met, there is no guarantee that the statistical properties of parameter estimates in ML method would be hold. Therefore, the robustness of parameter estimates that are obtained when the assumption is violated is an important issue which needs to be addressed. Section 5.4.5 will discuss

this issue in some depth.

5.4.4 Model Fit Evaluation

The major difference between SEM and other statistical methods lies in hypothesis testing. In most statistical methods, the objective is to reject the null hypothesis and accept the alternative hypothesis. Thus, the model can prove the argument proposed by researchers. In SEM, however, the null hypothesis is that the estimated model can fit the original data and the alternative hypothesis is that the estimated model cannot fit the original data. Obviously, when we cannot reject the null hypothesis, we cannot prove that there is a significant difference between the estimated model and the real world.

Model fit describes the degree to which the theoretical model fits the sample data. The two popular ways of evaluating whether the model fits the original data are the Chi-square (χ^2) test and fit indices. We will introduce these in turn.

Chi-square (χ^2) Test

A significant χ^2 value relative to the degrees of freedom (df) indicates that the observed and estimated matrices differ. A non-significant χ^2 value indicates that the two matrices are not significantly different, i.e. $H_0 : S = \Sigma(\theta)$ (Schumacker and Lomax, 2004) where S is the sample variance-covariance matrix and $\Sigma(\theta)$ is the estimated variance-covariance matrix. In SEM, researchers are interested in obtaining a non-significant χ^2 value. The equation of χ^2 test is as follows:

$$T = (N-1)F_{\min} \qquad (5.6)$$

The statistic T is often called the χ^2 test. N is the number of data observations. A

discrepancy function $F = F[S, \Sigma(\theta)]$ can be viewed as a measure of the discrepancy between S and $\Sigma(\theta)$ evaluated at an estimator and is minimised to yield $F_{\min}$ (Hoyle, 1995, p.77). The test statistic, $T = (N-1)F_{\min}$, has an asymptotic χ^2 distribution. In general, the $H_0 : S = \Sigma(\theta)$ is rejected if the T statistic exceeds a T_α in the χ^2 distribution at an α level of significance.

Unfortunately, although a large sample size can make the empirical results stable, it also increases the value χ^2 and causes the null hypothesis $H_0 : S = \Sigma(\theta)$ to be rejected. Furthermore, T ($T = (N-1)F_{\min}$) may not be χ^2 distributed when the multivariate normality assumption is violated. Therefore, the Chi-square (χ^2) test may not be a good enough statistic to measure the goodness-of-fit of a model under a large sample (Chiou, 2004). In this thesis, our sample is above 200 and variables are not normally distributed[104]. Therefore, it is not appropriate to use the Chi-square (χ^2) test alone. Thus, in addition to the Chi-square (χ^2) test, we also use three groups of indices in this thesis.

The first group is the goodness-of-fit index of the model. In this group, two indices are reported – GFI (goodness-of-fit index; Jöreskog and Sörbom, 1984) and AGFI (adjusted goodness-of-fit index; Jöreskog and Sörbom, 1984). GFI is similar to R^2 and AGFI is similar to adjusted-R^2 in regressions (Chiou, 2004). Both GFI and AGFI range from 0 to 1. When the index approaches 1, the model can explain the original data more precisely. In general, a good model will have GFI and AGFI greater than 0.9 (Hu and Bentler, 1999). The formulae of the two indices are as follows:

$$\mathrm{GFI_{ML}} = 1 - tr(\Sigma(\theta)^{-1}S - I)^2 / tr(\Sigma(\theta)^{-1}S)^2] \qquad (5.7)$$

$$\mathrm{AGFI_{ML}} = \frac{1 - GFI_{ML}}{1 - \dfrac{the\ number\ of\ parameters}{the\ number\ of\ observations}} \qquad (5.8)$$

[104] For the discussion of the non-normality problem, please see Section 5.4.5.

where S is the sample variance-covariance matrix and $\Sigma(\theta)$ is the estimated variance-covariance matrix.

The second group is the alternative index. In this group, one index will be introduced – RMSEA (root mean square error of approximation; Browne and Cudeck, 1993). RMSEA measures the amount of discrepancy between the model and the data taking the complexity of the model (i.e. the number of parameters being estimated) into consideration. A rule of thumb is that a good model should have RMSEA lower than 0.06 (Hu and Bentler, 1999). If the RMSEA is greater than 0.10, the model does not fit the data very well (Browne and Cudeck, 1993). The formula of RMSEA is as follows:

$$\text{RMSEA}_{\text{ML}} = \sqrt{\frac{\hat{F}_0}{df_{test}}} \qquad (5.9)$$

where $\hat{F}_0 = \frac{\chi^2_{test} - df_{test}}{N}$, N is the number of observations; χ^2_{test} is the χ^2 value of the hypothesised model and df_{test} is the degrees of freedom of the hypothesised model.

The third group is the residual index. In this thesis, the selected measure for absolute fit is SRMR (the standardised root mean square residual). SRMR is the standardised RMR. SRMR statistic is a measure of the size of the residuals (i.e. the difference between the estimated model and the observed data), with smaller values indicating better fit. SRMR is the standardised difference between the observed covariance and estimated covariance. A value of zero indicates perfect fit. SRMR tends to be smaller as the sample size increases or as the number of parameters in the model increases. The SRMR ranges from 0 to 1. In a good model, SRMR should be less than 0.10 (Hu and Bentler, 1999).

$$RMR_{ML} = \sqrt{2\sum_{i=1}^{q}\sum_{j=1}^{i}\frac{(s_{ij}-\hat{\sigma}_{ij})^2}{q(q+1)}} \qquad (5.10)$$

where $s_{ij}-\hat{\sigma}_{ij}$ is the difference between the sample variance-covariance matrix and the estimated variance-covariance matrix and q is the number of estimated parameters.

If these indices indicate acceptable overall fit of a model, then the focus moves to the specific variables of fit. Individual variables of free parameters are evaluated by t test to observe whether they are different from some specific null value, typically zero. Tests and comparisons of parameter estimates involve unstandardised parameter estimates, whereas the presentation of results usually involves standardised parameter estimates (Hoyle, 1995; Kaplan, 2000; Chiou, 2004). Unstandardised parameter estimates still retain the original scaling information and can only be interpreted by the scales of these variables. Unstandardised estimates are based on the variance-covariance matrix of raw data. When comparing across groups, variables may have different variances. Unstandardised parameter estimates indicate that per unit change in a specific independent variable will result in a fixed units change in the dependent variable when all the other independent variables remaining are at their mean (Hoyle, 1995).

However, when observed variables have different scales, it is necessary to standardise parameter estimates to aid interpretation (Kaplan, 2000). Standardised parameter estimates can be obtained by using standardised data. This is done in the usual way by subtracting the mean and dividing by the standard deviation of the respective variable. Standardised structural parameters emerge from analysis of this transformed data. Since standardised parameter estimates remove the scaling information, they are used to compare effects among latent variables. Standardised parameter estimates measure the number of standard deviation changes in the dependent variable when per standard deviation change in the independent variable, while all remaining independent variables are at their mean in standard normal units, which is zero. The interpretation is similar to OLS. If a standardised coefficient is 0.5,

then the latent dependent variable will increase by 0.5 standard units for each unit increase in the independent variable. To sum up, for unstandardised parameter estimates, equal coefficients indicate equal absolute effects on the dependent variable, whereas for standardised parameter estimates, equal coefficients mean equal effects on the dependent variable relative to differences in means and variances.

In addition to standardised coefficients, 'completely standardised coefficients' are obtained for the relationship between a measurement variable and a latent variable and for the relationship between latent variables (Kaplan, 2000; Chiou, 2004). If we only standardise the data of latent variables, these coefficients are called standardised coefficients. 'Completely standardised coefficients' signifies that all of the raw data and not just the estimated latent variables have been subjected to such standardisation. In this thesis, we always report completely standardised coefficients to aid interpretation.

5.4.5 SEM with Non-normal Variables

As we mentioned in Section 5.4.3, maximum likelihood (ML) and generalised least squares (GLS) are the most commonly used approaches to estimate parameters in SEM. These two approaches assume that the measurement variables are continuous and have a multivariate normal distribution (Hoyle, 1995). The body of literature that accumulated from the mid-1980s to the 1990s indicates that non-normality does not affect parameter estimates (Kaplan, 2000). Non-normality will lead to the overestimation of likelihood ratio chi-square statistics (Muthén and Kaplan, 1985, 1992; Kaplan, 2000) and the underestimation of fit indices, such as the NFI and CFI (Hoyle, 1995). Moreover, it also causes a serious underestimation of standard errors of parameter estimates (Kaplan, 2000). Unfortunately, many researchers often ignore the fundamental assumption. Some studies even use dummy variables in structural equation modelling. For example, some management papers include the dummy variable to examine the CEO duality. Breckler (1990) examines 72 articles in social psychology that use structural equation modelling and finds fewer than 10% of the

studies examine whether the data follow normal distributions. Unfortunately, until now, this kind of misuse still exists.

There are many approaches that try to solve this non-normality problem, such as item parcelling, the transformation of variables, and the asymptotic distribution free estimator (ADF). Item parcelling is a method to re-express variables. We can construct item parcels by summing or taking the mean of several items that measure the same concept (e.g., political involvement) (Hoyle, 1995). These parcels may exhibit a distribution that approaches a normal distribution more closely than the original items. Moreover, item parcelling can reduce the number of parameters that need to be estimated in the model. Therefore, the parameter estimates will be more stable in a small sample. Item parcelling, however, may result in the difficulty of interpreting empirical results. In this thesis, every MV has its own importance in the hypothesised relationship. It is not appropriate to sum up any two or three MVs.

The transformation of variables is another commonly used method to solve the non-normality problem. For example, for right-skewed data we can use logarithms to transform and for left-skewed data we can use roots to transform. Both these two transformation methods need to use non-negative data. Unfortunately, the data in this thesis are not suitable for this approach because we have some variables with negative values, such as ROE and ROA.

In the mid-1980s, Browne (1982, 1984) and Muthén (1978, 1984) developed an alternative estimation method to solve the non-normality problem for continuous variables and categorical variables respectively. The asymptotic distribution free estimator (ADF) is a distribution-free method. The key characteristic of ADF is the use of an optimal weight matrix that consists of a combination of the second- and fourth-order moments and thereby eliminates the influence of non-normality. However, the ADF method has two limitations (Hoyle, 1995). First, the calculation of ADF is very complicated and time-consuming as the computational demands are very high. Second, the calculation of ADF requires a big sample. In a fifteen-MV model, it is necessary to invert a 120 by 120 weight matrix including 14,400 unique

elements (Hoyle, 1995). In general, the ADF requires a sample size in excess of 2500 observations to obtain stable empirical results (West, Finch, and Curran, 1995). Unfortunately, we do not have such a large sample, which means we cannot use ADF to solve the non-normality problem. Since item parcelling, the transformation of variables, and the asymptotic distribution free estimator (ADF) are not suitable in this thesis, we develop another approach – the averaging method – to solve the non-normality problem and make a robust check.

According to the central limit theorem, a given distribution with a mean (μ) and variance (σ^2), the sampling distribution of the mean approaches a normal distribution with a mean (μ) and variance σ^2/N as N, the sample size, increases. In this thesis, we use C# programming language to write a program to select 30 companies randomly from our original sample. There is no constraint on selection. That is, we do not apply the constraint that every company can only be picked up for specific times to guarantee that every company shares the same opportunity of being selected. The whole selection process is very random. After selecting 30 companies randomly, we calculate the mean of the 30 companies to be the new observation. We do the same procedure at the same time to all variables to guarantee that the variables are consistent with each other.

If we have 200 companies in our sample, we can create $C_{30}^{200} = \frac{200!}{30! \times 170!}$ new observations by selecting 30 companies randomly from the sample. In order to increase the possibility that every company in the sample is selected, we choose 1,000 rather than the original number of observations (i.e. 203 Japanese companies and 200 Taiwanese companies). After applying the averaging method to the original data, the distribution of every variable should approach a normal distribution due to the central limit theorem. The empirical results will be thoroughly discussed in Chapter 6 and Chapter 7.

5.5 Conclusion

Over the last 30 years, SEM has become one of the most important multivariate techniques in social science and has recently been adopted in many business studies. As stated in the introduction, the focus of this chapter is to introduce the sample, the variables, and the foundations of SEM. There are four main steps in handling SEM: (1) Model specification; (2) Model identification; (3) Parameter estimation; and (4) Model fit evaluation.

SEM begins with the specification of a model to be estimated. No analysis can be done until the researcher has formulated a model of relationships between variables. This model is specified on the basis of the theory and hypotheses. Therefore, SEM is regarded as priori-specified theoretical model. The second step, model identification, determines whether it is possible to find unique solutions for the parameters of the specified model. We can find parameter estimates for a just-identification and an over-identification model, but not for an under-identification model. Once a model is specified, there are several estimation methods available. The selection of estimation methods is often determined by the distribution of variables, which are included in the model. Most estimation methods require variables to follow a normal distribution. After the parameter estimates are obtained, several goodness-of-fit indices are used to evaluate whether the model, which is developed empirically according to the theory and hypotheses, fits the data. There are four main indices to measure the model fit in this thesis. The goodness-of-fit index (GFI) and the adjusted goodness-of-fit index (AGFI) measure the level of the observed matrix, which is predicted by the estimated matrix (Hu and Bentler, 1995, p.85). In general, GFI and AGFI are greater than 0.90 in a good model (Hu and Bentler, 1995, 1999). The root mean square error of approximation (RMSEA) measures the amount of discrepancy between the model and the data, taking into consideration the complexity of the model (Schumacker and Lomax, 2004, p.84). An acceptable model should have RMSEA lower than 0.10 (Browne and Cudeck, 1993). The standardised root mean square residual (SRMR) is a measure of the size of the residuals (Schumacker and Lomax, 2004, p.103). In a good model, the SRMR should be less than 0.08 (Hu and

Bentler, 1999). The fit of a model can be improved through re-specification.

However, SEM has frequently been misused (Kline, 1998; Kaplan, 2000). One obvious problem is that most estimation methods require variables to follow a normal distribution. The assumption is particularly important for the maximum likelihood method (ML) and general least squares (GLS) because the ML and GLS assume that the measurement variables are continuous and have a multivariate normal distribution. Although the non-normality problem does not influence parameter estimates, it will result in the underestimation of standard errors (Kaplan, 2000). Regarding the goodness of fit, the non-normality problem will result in substantial overestimation of chi-square statistics (Muthén and Kaplan, 1985, 1992; Kaplan, 2000).

Currently, there are some alternative estimation methods to solve the non-normality problem, such as the asymptotic distribution free (ADF), which is proposed by Browne (1984). Unfortunately, ADF requires a large sample size (generally over 2500) to produce stable estimates. In this thesis, the Japanese and Taiwanese samples are not that large in this thesis. Therefore, we try another approach – the averaging method – to solve the non-normality problem and make a robust check. Based on the central limit theorem, we select 30 companies randomly from our original sample and calculate the mean of the 30 companies, which becomes the new observation. We finally select 1,000 new observations randomly, which become the new sample. After applying the averaging method to the original data, the distribution of every variable approaches a normal distribution.

In addition to SEM, this chapter also introduces the sample, data, and variables that are used in this thesis. We include 203 Japanese companies and 200 Taiwanese companies. The empirical results will be presented and discussed in Chapter 6 and Chapter 7. Chapter 6 discuss the results of the relationship between firm performance, political involvement, the intervention of financial institutions, and the board of directors. Chapter 7 discuss the results of the relationship between DOI, political involvement, the intervention of financial institutions, and the board of directors.

Chapter Six
Empirical Analysis of Political Involvement and Performance

6.1 Introduction

The review of the relevant literature in Chapter 2 highlighted the relationship between firm performance and the intervention of governments and financial institutions in Japan and Taiwan. Based on the discussions in Chapter 2, relevant hypotheses were developed in Section 4.2.1 and Section 4.2.2. The question we ask in Section 4.2.1 is why government and financial institutions intervene in the operation of a company. According to the hypotheses, the government and financial institutions may intervene in the operation of a company to exercise a monitoring function when firm performance is poor. In Section 4.2.2, we ask whether the intervention of governments and financial institutions is positively/negatively related to subsequent firm performance. Since intervention of government and financial institutions is usually regarded as inefficient, it may have a negative effect on subsequent firm performance. In contrast, the directors appointed by government and financial institutions may provide financial support or counsel to companies with poor performance (Westphal, 1999). Thus, subsequent firm performance may be positively related to political involvement and the intervention of financial institutions.

In order to test the hypotheses, this thesis adopts the methodology of structural equation modelling (SEM). Chapter 5 introduces the theory of SEM, which combines several measurement variables to produce a latent variable that is difficult to observe directly. By using latent variables and measurement variables, SEM can help researchers build more complete and complex models. Chapter 5 also introduces the sample, data, and variables that will be used in this thesis.

This chapter discusses the empirical results obtained by using SEM. The primary focus is on exploring the relationship between the intervention from the government and financial institutions through the board of directors and firm performance. In Section 6.2 we examine these relationships in Japan, and in Section 6.3 we investigate these relationships in Taiwan. We examine two issues in each country. Section 6.2.1 and 6.3.1 examine whether firm performance is related to the intervention of government and financial institutions through the board of directors in Japan and Taiwan, and Section 6.2.2 and 6.3.2 investigate whether this intervention is positively related to subsequent firm performance in Japan and Taiwan.

According to the empirical results, we find that the relationships between political involvement, the intervention of financial institutions, the board of directors, and firm performance are similar in Japan and Taiwan. Unlike OLS, which can only examine the direct relationships between dependent variables and independent variables, SEM can examine direct relationships and indirect relationships simultaneously to obtain the total effects. Therefore, by using SEM, we discover that the board of directors in Taiwan plays a significant intermediate role, whereas in Japan it does not significantly mediate the relationship between firm performance and government/financial institutions. Section 6.4 compares the differences between Japan and Taiwan and draws a conclusion.

6.2 Japan

6.2.1 Japan: Why do the government and financial institutions intervene?

The variables in the Japanese model can be classified into four groups – the monitoring ability of the board (BOARD), the intervention of financial institutions (INST), political involvement (GOV), and firm performance (PERF). Summary statistics are presented in Table 6-1 and show that the structure of corporate

governance mechanisms in Japanese companies is different from that of western companies (Monks and Minow, 2004). First, the ownership of banks and other financial institutions (FINOWN) is 45.01%, which suggests that they play an important role in the operation of Japanese companies. The main banks in Japan operate informally as monitors (Aoki and Patrick, 1994). Even companies that do not belong to a specific *keiretsu* usually maintain an informal relationship with commercial banks, such as the Bank of Yokohama and the Bank of Saitama. These banks can appoint representatives to the board to participate in the decision-making process and thereby influence firm performance. In Table 6-1, the ratio of bank representatives to total directors on the board (BANK_D) is 5.44%.

In addition to financial ownership, blockholder ownership is another characteristic of the Japanese corporate governance structure[105]. In our Japanese sample, the average ratio of blockholder ownership (BLOCK) is 38.82%. The principal concentrated shareholders are financial institutions and companies within the same *keiretsu* group. With large ownership there is clearly a strong incentive for blockholders to monitor the operation of a company.

In the political involvement group (GOV), the average ratio of government appointed directors to the number of total directors (GOV_APP) is 3.08%, which is very high compared with western companies operating under stock market capitalism where this phenomenon is virtually non-existent. Furthermore, the average ratio of gakubatsu (GAKUBATSU) is 53.37%, which is very high. Most directors in large Japanese enterprises graduate from one of the 'Big Five' universities. This phenomenon implies that a personal network, which is based on having similar university backgrounds, may be critical in the informal relationship between the private and public sector in Japan.

[105] Financial ownership is measured by the ratio of shares held by financial institutions to total outstanding shares. As in the study by Kang and Shivdasani (1995), the percentage of ownership accounted for by the top ten blockholders is captured in the variable BLOCK. Please refer to Section 5.3 for the definition of financial ownership and blockholder ownership.

Table 6-1 Summary Statistics, Japan, 2001-2003, 609 Observations _ Performance

BDOWN: the percentage of board ownership. OUTSIDE: the percentage of outside directors. MANOWN: the percentage of managerial ownership. BD_Q: the percentage of directors who occupy more than three positions in other companies. FINOWN: the ratio of financial institutions shares to total outstanding shares. BANK_D: the ratio of the number of bank representatives on the board to the total number of directors. CROSS: the ratio of institutional shares to total outstanding shares. BLOCK: the percentage of blockholder ownership. GOV_OWN: the ratio of government shares to total outstanding shares. GOV_I: the number of government agencies. GOV_APP: the ratio of the number of political-related directors to the total number of directors. GAKUBATSU: the ratio of the number of graduates from the elite universities (Tokyo, Kyoto, Waseda Hitotsubashi, and Keio) to the total number of executives in the highest board positions. TSR: the total return on shares assuming dividends are reinvested. ROE: computed as the net income divided by the shareholder's equity. ROA: calculated by dividing a company's annual earnings by its total assets.

Latent variable	Measurement Variable	Observations	Mean	St. Dev.	Max	Min
BOARD	BDOWN (%)	609	0.55	2.66	37.43	0.00
	OUTSIDE (%)	609	17.22	9.38	53.33	0.00
	MANOWN (%)	609	---	---	---	---
	BD_Q (%)	609	6.42	10.23	53.85	0.00
INST	FINOWN (%)	609	45.01	11.58	68.83	3.91
	BANK_D (%)	609	5.44	7.72	60.00	0.00
	CROSS (%)	609	13.41	12.46	86.00	0.70
	BLOCK (%)	609	38.82	10.82	81.59	17.45
GOV	GOVOWN (%)	609	0.64	5.69	66.74	0.00
	GOV_I	609	1.82	5.95	63.00	0.00
	GOV_APP (%)	609	3.08	5.15	33.33	0.00
	GAKUBATSU (%)	609	53.37	20.07	100.00	5.56
PERF	TSR (%)	609	7.28	51.23	425.10	-78.17
	ROE (%)	609	-2.4	80.48	80.35	-1771.8
	ROA (%)	609	1.18	5.20	63.87	-63.82

* Negative values in ROA are resulted from negative values in profits rather than assets.

Since SEM assumes that measurement variables follow a normal distribution, we use the averaging method, which is discussed in Section 5.4.5, to normalise them. We use the Kolmogorov-Smirnov test in this thesis to examine whether these measurement variables follow a normal distribution after adopting the averaging method. The Kolmogorov-Smirnov test can compare the observed cumulative distribution function for these variables with normal distribution. Table 6-2 presents the results of using the Kolmogorov-Smirnov test to assess the normality of the variables. Unlike other statistical tests, a significant result here means that the normal distribution is not a good fit for the data. We can observe that before using the normalising procedure, almost all variables are not normal distributions. After normalising, the

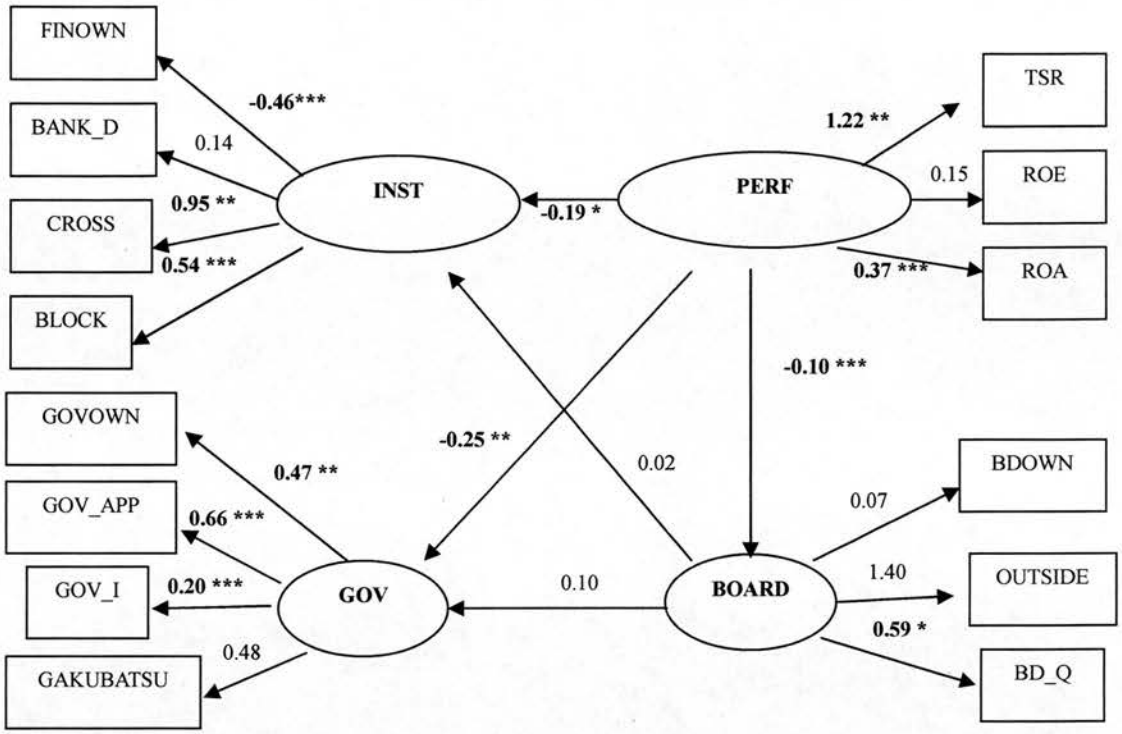
non-normality problem is improved significantly. In this thesis, we present results both with original and normalised data.

According to our hypotheses in Section 4.2.1, we can draw Path Diagram 6-1. Instead of combining several regressions, this thesis uses SEM to calculate path coefficients. In order to unify the scales of measurement variables (MVs) and latent variables, we present completely standardised coefficients[106] throughout this thesis. Table 6-3 presents the model statistics and the completely standardised coefficients, which are estimated by using SEM. These results are shown in Path Diagram 6-1. The model statistics presented in Table 6-3 indicate an acceptable model fit. GFI (goodness-of-fit index) equals 0.90, and AGFI (adjusted goodness-of-fit index) equals 0.85[107]. In addition to the goodness-of-fit indices, the main alternative index of this model is also acceptable: RMSEA (root mean square error of approximate) equals 0.10, which is the threshold of RMSEA. If RMSEA is lower than 0.06, this SEM model is ideal. RMSEA of an ideal model should not exceed 0.10 (Browne and Cudeck, 1993). Moreover, in the residual analysis, SRMR (standardised root mean square residual) equals 0.09. SRMR of an ideal SEM model should be as small as possible. In general, when SRMR is lower than 0.08, the unexplained variance of this SEM model is very small (Hu and Bentler, 1999).

[106] For the discussion of completely standardised coefficients, please refer to Section 5.3.4.

[107] Please see Section 5.4.4 for more discussion regarding these goodness-of-fit indices. Hu and Bentler (1999) claim that the GFI and AGFI of a good SEM model should exceed 0.90. GFI of this model reaches the standard.

Path Diagram 6-1: Firm Performance (t) and Governance (t+1), Japan



* p<0.1; ** p<0.05; *** p<0.01

Some other studies indicate that the ratio of WLS (Normal Theory Weighted Least Squares Chi-Square) to the degrees of freedom can also represent the goodness-of-fit of a SEM model[108]. However, when the sample or the number of parameters is large, WLS will be very high and thereby increases the possibility of rejecting the null hypothesis. The model in this section has 14 parameters and 406 companies. Therefore, it is not seen as appropriate to use the ratio of WLS to the degrees of freedom in this situation. Although the goodness-of-fit indices of this model are not very good, they are still acceptable and present valuable results. Kline (1998) claims that we should consider the rationality of a model but not only judge models by using indices alone.

[108] Please see Section 5.4.4 for the detailed discussion about the ratio of WLS (Normal Theory Weighted Least Squares Chi-Square) to the degrees of freedom.

Table 6-2 Kolmogorov-Smirnov Test for Japanese Data_Performance

Please refer to Table 6-1 for the explanations of variables.

	Original Data (N=406)		Normalised Data (N=1000)	
Variables	Kolmogorov-Smirnov Z	Signifiance (2-tailed)	Kolmogorov-Smirnov Z	Signifiance (2-tailed)
BDOWN	8.463	0.000	2.223	0.000
OUTSIDE	2.527	0.000	0.531	0.941
BD_Q	5.959	0.000	1.212	0.106
FINOWN	1.371	0.047	0.694	0.721
BANK_D	4.795	0.000	0.842	0.478
CROSS	4.087	0.000	0.848	0.469
BLOCK	2.698	0.000	0.866	0.442
GOVOWN	10.235	0.000	5.785	0.000
GOV_I	7.548	0.000	1.802	0.003
GOV_APP	7.032	0.000	0.650	0.792
GAKUBATSU	1.150	0.142	0.742	0.641
TSR	0.848	0.468	1.126	0.158
ROE	6.284	0.000	0.788	0.563
ROA	3.048	0.000	1.026	0.243

The empirical results based on normalised data are not different from the empirical results which use original data. Since the measurement variables have different scales, we have utilised completely standardised coefficients to assist interpretation (Kaplan, 2000)[109]. Table 6-3 and Path Diagram 6-1 provide the completely standardised path coefficients, and Table A3-1 in Appendix 3 provides the structural parameters. In each latent variable, the measurement variable which is assigned the unit value 1.0 is placed at the top.

The completely standardised coefficients in Table 6-3 and Path Diagram 6-1 provide strong support for Hypothesis 1[110]. We can observe that the direct relationship between firm performance (PERF) and political involvement (GOV) is -0.25, which is significant at the 5% level. Compared to the western corporate governance mechanism, which is based on the assumption that a company should maximise the interests of shareholders, the system in Japan is set up to promote the interests of the company, the employees and the whole society rather than the passive shareholders (Monks and Minow, 2004). In this kind of system, the government sees itself as a

[109] Please see Section 5.4.3 for the detailed discussion regarding completely standardised coefficients.
[110] Hypothesis 1: The relationship between firm performance (t) and political involvement (t+1) should be negative.

protector of domestic industry (Analytica, 1992). The whole system works co-operatively. Given this situation, when a company performs poorly or has a financial crisis and thereby causes instability, the government will intervene in its operation by appointing retired ex-bureaucrats to the board. From the company's viewpoint, a company with poor performance is also willing to accept government-appointed directors (*amakudari*) or employ directors who graduated from the 'Big Five' in order to build a tighter relationship with the government and encourage the government to help it solve financial problems.

From Path Diagram 6-1 and Table 6-3, we also observe that the direct relationship between firm performance (PERF) and the intervention of financial institutions (INST) is -0.19, which is significant and negative at the 10% level. The empirical result is consistent with Hypothesis 2[111]. Financial institutions, such as banks, securities companies and other blockholders, also appear to act in a similar way to the Japanese government. When a partner company performs poorly, they will appoint representatives to the board to exercise the monitoring function. They may also increase their ownership to give support and capital. This finding is consistent with the arguments in prior studies, such as Sheard (1994), Morck and Nakamura (1999), Kaplan and Minton (1994), and Kang and Shivdasani (1995). In addition to INST and GOV, the direct relationship between firm performance (PERF) and board (BOARD) is also significant and negative (-0.10) at the 1% level. This result supports the argument that poor firm performance will make a company improve the monitoring ability of its board by increasing the percentage of outside directors and board ownership. The result is consistent with Hypothesis 3[112] as well as many prior studies, such as Hermalin and Weisbach (2003) and Coles et al. (2001). It is also consistent with the supposition in Sanders and Carpenter (1998) that implies that firm performance and DOI may influence the structure of the board of directors.

The minor paths – the relationship between board (BOARD) and political involvement (GOV) as well as the relationship between board (BOARD) and the

[111] Hypothesis 2: The relationship between firm performance (t) and the intervention of financial institutions (t+1) is negative.
[112] Hypothesis 3: The relationship between PERF (t) and the monitoring ability of the board (t+1) is negative.

intervention of financial institutions (INST) – are not significant. Therefore, the indirect paths, PERF→BOARD→GOV and PERF→BOARD→INST, are not significant either (t= -0.26 and -0.19 respectively). Although the indirect paths are insignificant, the total effects from PERF on GOV/INST are significant. These empirical results, therefore, imply that political involvement in Japan is direct. The government will not intervene in the operation of a company through the board of directors (BOARD). In other words, although the Japanese government and financial institutions appoint retired bureaucrats and representatives to the board to exercise the monitoring function, the board of directors does not play an intermediate role between the government/financial institutions and firm performance, which leads to the rejection of Hypothesis 7[113]. When firm performance is poor, the Japanese government and financial institutions will intervene directly without going through the board of directors in order to restore confidence among shareholders and thereby stabilise society. Normalised data also presents similar results among latent variables in Table 6-3.

Because of data limitations and the absence of a similar phenomenon (Suganuma, 1995), the Taiwanese model does not include the variable GAKUBATSU. In order to examine the difference between Taiwan and Japan, we rerun the model without the variable GAKUBATSU. Table 6-4, which is included to confirm the results in Table 6-3, shows the completely standardised coefficients of the model without the variable GAKUBATSU, and Table A3-2 in Appendix 3 shows the structural parameters. The results in the model without the variable GAKUBATSU are similar to the results in the model with it. By using the original data in Table 6-4, it can be seen that the total effect from firm performance (PERF) on political involvement (GOV) is also significant and negative (-0.25, t = -1.71). Therefore, Hypothesis 1 is supported. GFI and AGFI are higher in the model that includes the variable GAKUBATSU, as seen in Table 6-3. This implies that in the Japanese model this variable plays a very important role in the relationship between political involvement (GOV) and firm performance (PERF) (Van Rixtel and Hoskisson, 2002; Van Rixtel, 2002; Colignon and Usui, 2003). In Table 6-4, which uses the original data and excludes the variable

[113] Hypothesis 7: The board of directors may mediate the relationship between performance and the intervention of government and financial institutions.

GAKUBATSU, it can be seen that the total effect from PERF on INST is also significant and negative. Furthermore, the direct relationship between PERF and BOARD is -0.21, which is significant at the 5% level. Therefore, Hypothesis 2 and Hypothesis 3 are both supported in Table 6-4. Once again, the indirect paths, PERF→BOARD→GOV and PERF→BOARD→INST, are not significant, which indicates that the Japanese boards do not play an intermediate role between companies and government/financial institutions. Therefore, Hypothesis 7 is not supported. The normalised data in Table 6-4 also report similar results among the variables.

Table 6-3 Path Coefficients: Firm Performance (t) and Governance (t+1), Japan

OUTSIDE: the percentage of outside directors. BDOWN: the percentage of board ownership. BD_Q: the percentage of directors who occupy more than three positions in other companies. BANK_D: the ratio of the number of bank representatives on the board to the total number of directors. FINOWN: the ratio of financial institutions shares to total outstanding shares. CROSS: the ratio of institutional shares to total outstanding shares. BLOCK: the percentage of blockholder ownership. GAKUBATSU: the ratio of the number of graduates from the elite universities (Tokyo, Kyoto, Waseda Hitotsubashi, and Keio) to the total number of directors in the board. GOVOWN: the ratio of government shares to total outstanding shares. GOV_I: the number of government agencies. GOV_APP: the ratio of the number of political-related directors to the total number of directors. ROE: computed as the net income divided by the shareholder's equity. TSR: the total return on shares assuming dividends are reinvested. ROA: calculated by dividing a company's annual earnings by its total assets.

	2001-2003 data		Normalised data	
Description of path	**path coefficient**	**t value**	**path coefficient**	**t value**
OUTSIDE <-- BOARD	1.40		0.71	
BDOWN <-- BOARD	0.07	0.20	0.21	1.82*
BD_Q <-- BOARD	0.59	1.69*	-0.02	-0.24
BANK_D <-- INST	0.14		0.12	
FINOWM <-- INST	-0.46	-2.58***	-0.53	-3.24***
CROSS <-- INST	0.95	2.56**	0.87	3.22***
BLOCK <-- INST	0.54	2.62***	0.54	3.24***
GAKUBATSU<--GOV	0.48		0.52	
GOVOWN <-- GOV	0.47	3.58***	0.40	2.83***
GOV_I <-- GOV	0.20	2.65***	0.07	1.97**
GOV_APP <-- GOV	0.66	5.10***	1.21	7.18***
ROE <-- PERF	0.15		0.40	
TSR <-- PERF	1.22	2.15**	0.67	8.39***
ROA <-- PERF	0.37	3.93***	0.61	8.54***
Direct Effect				
BOARD --> INST	0.02	0.19	0.01	0.08
BOARD --> GOV	0.10	0.20	0.15	1.62
PERF --> INST	-0.19	-1.92*	-0.25	-2.69***
PERF --> GOV	-0.25	-2.45**	-0.17	-3.69***
PERF --> BOARD	-0.10	-2.63***	-0.23	-3.82***
Indirect Effect				
PERF-->BOARD-->INST	-0.002	-0.19	-0.002	-0.08
PERF-->BOARD-->GOV	-0.01	-0.20	-0.03	-1.56
Total Effect				
PERF --> INST	-0.19	-1.94*	-0.25	-2.73***
PERF --> GOV	-0.26	-2.80***	-0.20	-4.56***
Observations	406		1000	
GFI	0.90		0.88	
AGFI	0.84		0.78	
SRMR	0.09		0.10	
RMSEA	0.10		0.13	

* p<0.1; ** p<0.05; *** p<0.01

Table 6-4 Path Coefficients: Firm Performance (t) and Governance (t+1), Japan, without GAKUBATSU

Please refer to Table 6-3 for the explanations of variables.

	2001-2003 data		Normalised data	
Description of path	**path coefficient**	**t value**	**path coefficient**	**t value**
OUTSIDE <-- BOARD	0.77		0.53	
BDOWN <-- BOARD	0.18	0.97	0.34	3.71***
BD_Q <-- BOARD	-0.05	-0.61	-0.05	-0.91
BANK_D <-- INST	0.17		0.14	
FINOWM <-- INST	-0.56	-2.83***	-0.49	-3.82***
CROSS <-- INST	0.82	2.82***	0.90	3.77***
BLOCK <-- INST	0.55	2.82***	0.51	3.84***
GOV_I <-- GOV	0.11		0.07	
GOVOWN <-- GOV	0.39	1.91*	0.41	1.81*
GOV_APP <-- GOV	0.91	1.49	0.93	3.03***
ROE <-- PERF	0.34		0.40	
TSR <-- PERF	0.76	4.76***	0.70	8.81***
ROA <-- PERF	0.58	5.14***	0.63	8.98***
Direct Effect				
BOARD --> INST	0.12	0.80	-0.11	-1.35
BOARD --> GOV	0.13	0.74	0.14	1.80*
PERF --> INST	-0.26	-2.07**	-0.31	-3.02***
PERF --> GOV	-0.22	-1.71*	-0.17	-2.97***
PERF --> BOARD	-0.21	-2.48**	-0.43	-5.23***
Indirect Effect				
PERF-->BOARD-->INST	-0.03	-0.73	0.05	1.30
PERF-->BOARD-->GOV	-0.03	-0.78	-0.06	-1.80*
Total Effect				
PERF --> INST	-0.29	-2.21**	-0.26	-3.13***
PERF --> GOV	-0.25	-1.67*	-0.23	-4.89***
Observations	406		1000	
GFI	0.88		0.88	
AGFI	0.82		0.82	
SRMR	0.09		0.09	
RMSEA	0.11		0.12	

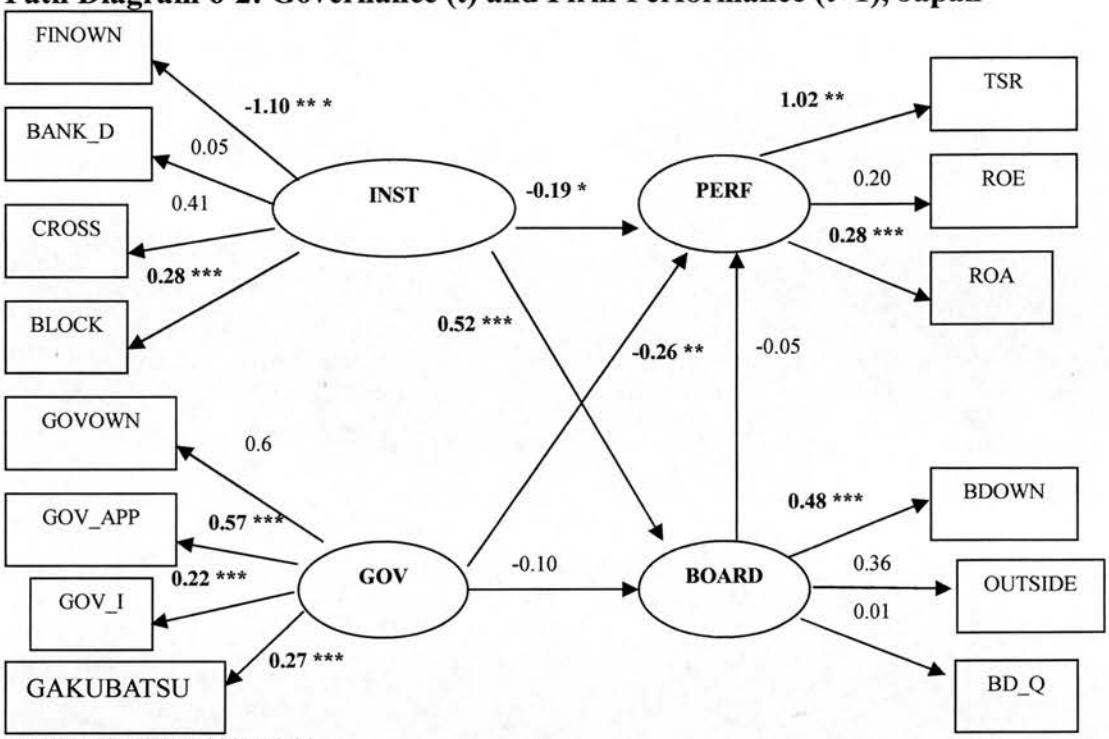
* p<0.1; ** p<0.05; *** p<0.01

6.2.2 Japan: Is subsequent firm performance positively related to such intervention?

Having discussed why the government and financial institutions intervene in the operation of a company, we would like to examine whether this intervention is positively related to subsequent firm performance. If the government and financial institutions play the role of a monitoring function, subsequent firm performance of companies that experience intervention should show a positive association. This section will discuss the empirical results concerning subsequent firm performance.

The hypotheses discussed in Section 4.2.2 produce Path Diagram 6-2. The intervention of financial institutions (INST) and political involvement (GOV) will affect firm performance (PERF) directly, and also affect firm performance (PERF) through the intermediate variable BOARD. Path Diagram 6-2 and Table 6-5 include the completely standardised coefficients for the hypothesised relationships and the model statistics. Structural parameters are exhibited in Table A3-3 in Appendix 3. In each latent variable, the measurement variable which is assigned the unit value 1.0 is placed at the top. The main goodness-of-fit indices are acceptable: GFI (goodness-of-fit index) equals 0.91, and AGFI (adjusted goodness-of-fit index) equals 0.87. In the alternative index, RMSEA (root mean square error of approximate) equals 0.08. In the residual analysis, SRMR (standardised root mean square residual) equals 0.07.

Path Diagram 6-2: Governance (t) and Firm Performance (t+1), Japan



* p<0.1; ** p<0.05; *** p<0.01

From Table 6-5, we can observe that the direct relationship between political involvement (GOV) and subsequent firm performance (PERF) is significant but negative (-0.26, t = -1.97). According to our Hypothesis 4-1[114], the government will appoint retired bureaucrats to the board to help these troubled companies and to thereby restore confidence among investors (Van Rixtel, 2002; Van Rixtel and Hoskisson, 2002). The *amakudari* is used for the monitoring purpose. By receiving such help from the government, subsequent firm performance should be better after the recruitment of retired bureaucrats. However, according to the empirical analysis presented here, Hypothesis 4-1 is not supported because subsequent firm performance (PERF) is not positively related to former political involvement (GOV).

The empirical analysis does, however, support Hypothesis 4-2[115], which states that the relationship between political involvement and subsequent firm performance is negative. From a company's viewpoint, troubled companies are willing to employ

[114] Hypothesis 4-1: The relationship between political involvement (t) and firm performance (t+1) should be positive.

[115] Hypothesis 4-2: A company suffering a financial crisis will be more willing to employ retired bureaucrats and thereby buy influence from the government. The relationship between political involvement (GOV) and firm performance (PERF) will be negative.

retired bureaucrats because they can build an informal network with the government through them. However, based on the argument that government intervention is inefficient, subsequent firm performance should be negatively associated with such intervention. Our empirical analysis is consistent with Hypothesis 4-2, which states that government intervention, such as *amakudari*, is negatively related to subsequent firm performance.

The direct relationship between INST and PERF is also negative and significant (-0.19, t = -1.73), which is consistent with Hypothesis 5-2[116]. This agrees with the findings of Morck and Nakamura (1999) who conclude that companies experience negative share returns in the year following bank director appointments, but is contrary to Hypothesis 5-1 and the findings of Kang and Shivdasani (1995). Kang and Shivdasani (1995) document that companies with ties to a main bank are more likely to replace top executives for poor performance than companies without such ties. They also indicate that the improvement of firm performance is evident after the replacement of top executives. Therefore, companies with the ties to a main bank will have better firm performance.

With respect to the Japanese corporate governance mechanism, we can observe from Table 6-5 that the influence of the internal monitoring system – the board – is not significant in Japan. The direct relationship between board (BOARD) and the subsequent performance (PERF) is not significant (-0.05, t = -0.41). That is, the relationship between the monitoring ability of a board and subsequent firm performance is not significant. Therefore, Hypothesis 6[117] is not supported. This result implies that the monitoring function in Japan relies mainly on external institutions, such as the government and financial institutions, not on the board. Because of the main bank system (Aoki and Patrick, 1994; Monks and Minow, 2004) and the phenomenon of concentrated shareholders, the Japanese corporate governance mechanism is mainly based on government, banks, securities companies,

[116] Hypothesis 5-2: The relationship between the intervention of financial institutions (t) and the subsequent firm performance (t+1) will be negative.
[117] Hypothesis 6: The relationship between the monitoring ability of the board (t) and the subsequent firm performance (t+1) and is positive.

and insurance companies. Our empirical results provide support for this argument. Given the insignificant relationship between BOARD and PERF, which results in the significance of indirect paths, Hypothesis 7 is not supported. The results using normalised data are similar to the results using original data in Table 6-5.

In order to compare the difference between Japan and Taiwan, we rerun the model without the variable GAKUBATSU. Table 6-6 presents the empirical results of the model without this variable. The relationships in the model without the variable GAKUBATSU are similar to the relationships in the model that includes it. The total effect from INST on PERF in Table 6-6 is -0.17 (t = -2.35) and in Table 6-5 is -0.22 (t = -2.11). Similarly, the total effect from GOV on PERF in Table 6-6 is -0.23 (t = -2.06) and in Table 6-5 is -0.27 (t = -1.97). Therefore, Hypothesis 4-2 and Hypothesis 5-2 are both supported. Similarly, the relationship between BOARD and PERF is still insignificant, which results in insignificant indirect paths, GOV→BOARD→PERF and INST→BOARD→PERF. Therefore, Hypothesis 6 and Hypothesis 7 are not supported. The overall situation seems to be that the intermediate role of a board is not supported in Japan.

Moreover, GFI and AGFI are also higher in the model with the variable GAKUBATSU. This result suggests that this variable plays an important role in the relationship between political involvement and firm performance in the Japanese model (Van Rixtel and Hoskisson, 2002; Van Rixtel, 2002; Colignon and Usui, 2003). Normalised data in Table 6-6 also exhibit the same relationships among latent variables.

Table 6-5 Path Coefficients: Governance (t) and Firm Performance (t+1), Japan

OUTSIDE: the percentage of outside directors. BDOWN: the percentage of board ownership. BD_Q: the percentage of directors who occupy more than three positions in other companies. CROSS: the ratio of institutional shares to total outstanding shares. FINOWN: the ratio of financial institutions shares to total outstanding shares. BANK_D: the ratio of the number of bank representatives on the board to the total number of directors. BLOCK: the percentage of blockholder ownership. GOVOWN: the ratio of government shares to total outstanding shares. GOV_I: the number of government agencies. GOV_APP: the ratio of the number of political-related directors to the total number of directors. GAKUBATSU: the ratio of the number of graduates from the elite universities (Tokyo, Kyoto, Waseda Hitotsubashi, and Keio) to the total number of executives in the highest board positions. ROE: computed as the net income divided by the shareholder's equity. TSR: the total return on shares assuming dividends are reinvested. ROA: calculated by dividing a company's annual earnings by its total assets.

	2001-2003 data		Normalised data	
Description of path	**path coefficient**	**t value**	**path coefficient**	**t value**
OUTSIDE <-- BOARD	0.36		0.43	
BDOWN <-- BOARD	0.48	3.49***	0.48	6.63***
BD_Q <-- BOARD	0.01	0.06	-0.07	-1.62
CROSS <-- INST	0.41		0.34	
FINOWM <-- INST	-1.10	-4.26***	-1.39	-4.41***
BANK_D <-- INST	0.05	1.17	0.01	0.59
BLOCK <-- INST	0.28	7.32***	0.22	11.30***
GOVOWN <-- GOV	0.60		0.72	
GOV_I <-- GOV	0.22	3.21***	0.21	5.09***
GOV_APP <-- GOV	0.57	5.83***	0.55	9.99***
GAKUBATSU <-- GOV	0.27	3.93***	0.34	7.63***
ROE <-- PERF	0.20		0.23	
TSR <-- PERF	1.02	2.51**	0.93	4.41***
ROA <-- PERF	0.28	3.45***	0.30	5.62***
Direct Effect				
INST --> BOARD	0.52	3.59***	0.29	5.76***
GOV --> BOARD	-0.10	-0.65	0.30	3.77***
INST --> PERF	-0.19	-1.73*	-0.21	-3.67***
GOV --> PERF	-0.26	-1.97**	-0.21	-2.93***
BOARD --> PERF	-0.05	-0.41	0.07	0.98
Indirect Effect				
INST --> BOARD --> PERF	-0.03	-0.41	0.02	0.99
GOV --> BOARD --> PERF	-0.01	0.34	0.02	0.94
Total Effect				
INST --> PERF	-0.22	-2.11**	-0.19	-3.76***
GOV --> PERF	-0.27	-1.97**	-0.19	-2.96***
Observations	406		1000	
GFI	0.91		0.88	
AGFI	0.87		0.82	
SRMR	0.07		0.08	
RMSEA	0.08		0.11	

* p<0.1; ** p<0.05; *** p<0.01

Table 6-6 Path Coefficients: Governance (t) and Firm Performance (t+1), Japan, without GAKUBATSU

Please refer to Table 6-5 for the explanations of variables.

	2001-2003 data		Normalised data	
Description of path	**path coefficient**	**t value**	**path coefficient**	**t value**
OUTSIDE <-- BOARD	0.51		0.54	
BDOWN <-- BOARD	0.35	2.20**	0.38	4.82***
BD_Q <-- BOARD	-0.03	-0.40	-0.13	-2.63***
BLOCK <-- INST	0.26		0.31	
FINOWM <-- INST	-1.55	-1.34	-1.33	-3.2***
BANK_D <-- INST	0.04	1.47	0.06	3.06***
CROSS <-- INST	1.32	1.34	1.11	3.18***
GOVOWN <-- GOV	0.48		0.59	
GOV_I <-- GOV	0.18	2.79***	0.19	4.35***
GOV_APP <-- GOV	0.75	3.67***	0.68	7.01***
ROE <-- PERF	0.21		0.24	
TSR <-- PERF	0.99	2.67***	0.91	4.79***
ROA <-- PERF	0.29	3.48***	0.31	5.69***
Direct Effect				
INST --> BOARD	0.17	3.00***	0.17	4.35***
GOV --> BOARD	0.09	0.79	0.36	4.69***
INST --> PERF	-0.15	-2.24**	-0.24	-4.20***
GOV --> PERF	-0.22	-2.02**	-0.20	-2.92***
BOARD --> PERF	-0.13	-1.14	0.06	0.88
Indirect Effect				
INST --> BOARD --> PERF	-0.02	-1.07	0.01	0.90
GOV --> BOARD --> PERF	-0.01	-0.68	0.02	0.85
Total Effect				
INST --> PERF	-0.17	-2.35**	-0.23	-4.22***
GOV --> PERF	-0.23	-2.06**	-0.18	-2.97***
Observations	406		1000	
GFI	0.90		0.88	
AGFI	0.84		0.82	
SRMR	0.08		0.08	
RMSEA	0.10		0.12	

* p<0.1; ** p<0.05; *** p<0.01

6.3 Taiwan

6.3.1 Taiwan: Why do the government and financial institutions intervene?

In addition to the Japanese models, we also investigate the intervention of government and financial institutions in Taiwan. In this section, we examine whether firm performance is associated with subsequent intervention of government and financial institutions in Taiwan. The summary statistics of the Taiwanese sample are shown in Table 6-7. Compared to the Japanese data in Table 6-1, we can observe that financial ownership (FINOWN) is much smaller in Taiwan, whereas board ownership (BDOWN), the ratio of outside directors (OUTSIDE), government ownership (GOVOWN), and the ratio of government representatives (GOV_APP) are all higher. The ratio of outside directors (OUTSIDE) and the ratio of directors who serves as a director in more than three companies (BD_Q) are both large in Taiwan. Thus, it is common for an outside director to sit on the board of several different companies concurrently, which casts doubt on their monitoring ability. For example, one outside director in Acer (SIC code: 2353) served as an outside director for 12 other companies in 2004, and another in ABIT (SIC code: 2407) served as an outside director for 6 companies in the same year.

Although Company Law in Taiwan requires companies to have outside directors[118] on the board, there is no other relevant law to protect these outside directors' right to exercise monitoring. It is easy for directors who are appointed by the government and financial institutions to control the board. For example, two outside directors in the China Development Financial Holding Corporation (SIC code: 2883) resigned their positions before the expiration of their terms on the board in 2006 because of family control[119]. Although both Taiwanese and Japanese banks play an important

[118] Starting 21st Feb, 2002, the 'Taiwan Stock Exchange Corporation Criteria for Review of Securities Listings' forces listed companies to have at least two independent directors and at least one auditor on the board but this rule only applies to those companies that are listed after 21st Feb, 2002.

[119] The serial discussion can be obtained in *China Times* (in Chinese), B1, B2, 18th May, 2006; *China Times*, B2, 19th May, 2006; *China Times*, B2, 23rd May, 2006.

role as a monitor, the summary statistics reveal that political involvement and the corporate governance mechanism are different in these two countries in that FINOWN is much higher in Japan whereas GOVOWN, GOV_I, and GOV_APP are all higher in Taiwan. Moreover, BDOWN and OUTSIDE are also much higher in Taiwan.

Table 6-7 Summary Statistics, Taiwan, 2001-2003, 600 Observations _Performance

BDOWN: the percentage of board ownership. OUTSIDE: the percentage of outside directors. MANOWN: the percentage of managerial ownership. BD_Q: the percentage of directors who occupy more than three positions in other companies. FINOWN: the ratio of financial institutions shares to total outstanding shares. BANK_D: the ratio of the number of bank representatives on the board to the total number of directors. CROSS: the ratio of institutional shares to total outstanding shares. BLOCK: the percentage of blockholder ownership. GOV_OWN: the ratio of government shares to total outstanding shares. GOV_I: the number of government agencies. GOV_APP: the ratio of the number of political-related directors to the total number of directors. GAKUBATSU: the ratio of the number of graduates from the elite universities (Tokyo, Kyoto, Waseda Hitotsubashi, and Keio) to the total number of executives in the highest board positions. TSR: the total return on shares assuming dividends are reinvested. ROE: computed as the net income divided by the shareholder's equity. ROA: calculated by dividing a company's annual earnings by its total assets.

Latent variable	Measurement Variable	Observations	Mean	St. Dev.	Max	Min
BOARD	BDOWN (%)	600	10.28	11.66	70.61	0.00
	OUTSIDE (%)	600	44.05	23.56	100.00	0.00
	MANOWN (%)	600	2.84	5.99	53.58	0.00
	BD_Q (%)	600	28.26	24.43	100.00	0.00
INST	FINOWN (%)	600	3.35	6.09	55.88	0.00
	BANK_D (%)	600	5.48	11.43	75.00	0.00
	CROSS (%)	600	23.91	18.91	79.92	0.01
	BLOCK (%)	600	37.45	16.34	95.32	5.03
GOV	GOVOWN (%)	600	3.73	10.24	97.13	0.00
	GOV_I	600	3.48	5.02	38.00	0.00
	GOV_APP (%)	600	7.00	17.99	100.00	0.00
	GAKUBATSU (%)	600	---	---	---	---
PERF	TSR (%)	600	36.69	81.17	659.51	-76.37
	ROE (%)	600	8.24	14.36	67.78	-78.58
	ROA (%)	600	6.17	8.31	50.64	-35.51

* Negative values in ROA are resulted from negative values in profits rather than assets.

Since SEM requires measurement variables to be a normal distribution, we use the averaging method mentioned in Section 5.4.5 to normalise the variables. Table 6-8 presents the result of the Kolmogorov-Smirnov test. Before using the normalising procedure, almost all variables do not follow a normal distribution. After adopting the averaging method, the non-normality problem is improved significantly.

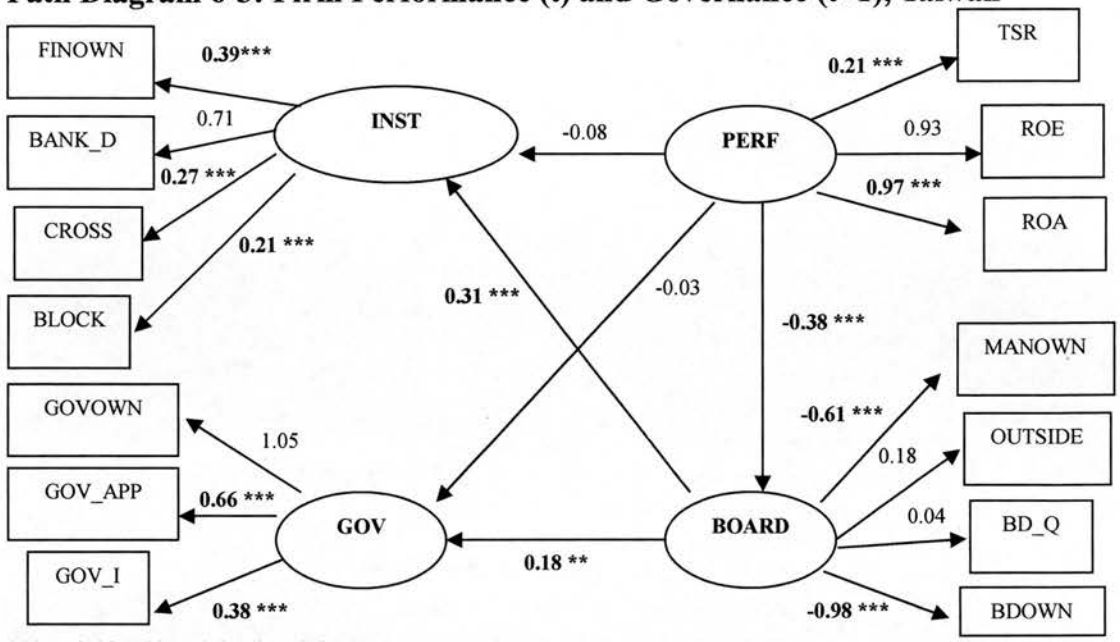
Reflecting the hypotheses discussed in Section 4.2.1, Path Diagram 6-3 is drawn. Table 6-9 presents the model statistics and the completely standardised coefficients. Structural parameters, which are estimated under our hypotheses, are presented in Table A4-1 in Appendix 4. The main goodness-of-fit indices of this model are: GFI equals 0.89, AGFI equals 0.83. In the alternative index, RMSEA equals 0.10. In the residual analysis, SRMR equals 0.09. The overall model is acceptable. Other researchers (e.g. Lin, 2005) also present similar indices.

Table 6-8 Kolmogorov-Smirnov Test for Taiwanese Data_Performance

Please refer to Table 6-7 for the explanations of variables.

	Orgianal Data (N=400)		Normalised Data (N=1000)	
Variables	Kolmogorov-Smirnov Z	Significance (2-tailed)	Kolmogorov-Smirnov Z	Significance (2-tailed)
BDOWN	3.767	0.000	0.746	0.633
OUTSIDE	1.133	0.154	0.637	0.811
MANOWN	6.274	0.000	1.950	0.001
BD_Q	2.310	0.000	0.670	0.761
FINOWN	5.635	0.000	2.002	0.001
BANK_D	7.483	0.000	1.046	0.224
CROSS	2.500	0.000	0.546	0.926
BLOCK	1.258	0.084	0.706	0.702
GOVOWN	7.097	0.000	1.425	0.035
GOV_I	4.465	0.000	1.056	0.215
GOV_APP	8.892	0.000	1.084	0.191
TSR	3.243	0.000	1.052	0.219
ROE	2.560	0.000	0.743	0.639
ROA	1.899	0.001	0.776	0.583

Path Diagram 6-3: Firm Performance (t) and Governance (t+1), Taiwan



*** p<0.001, ** p<0.05, * p<0.01

By using the original data, the completely standardised coefficients reported in Table 6-9 and the derived Path Diagram 6-3 allow the maintained hypotheses to be tested. Original structural coefficients for Table 6-9 can be found in Table A4-2 in Appendix 4. The estimated Taiwanese model is very different from that found for the Japanese model. Specifically, the direct paths of PERF → GOV and PERF → INST are not significant. However, this does not mean that there is no significant relationship at work. In contrast to the direct significant paths in Japan (see Table 6-3 and Path Diagram 6-1), there is an indirect significant relationship between PERF and GOV through the intermediate BOARD. From Path Diagram 6-3, it can be seen that the indirect relationship of PERF on GOV is (-0.38)*(0.18), which equals -0.07 (t = -2.90). The indirect path between PERF and GOV is significant at the 1% level. Similarly, the significant indirect relationship of PERF on INST is (-0.38)*(0.31), which equals -0.12 (t = -3.55). This indirect path between PERF and INST is significant at the 1% level. The relationship between PERF and BOARD is also negative (-0.38. t = -2.99) and significant at the 1% level. The empirical results are, therefore, consistent with Hypothesis 1, Hypothesis 2, and Hypothesis 3. The empirical results suggest that the government and financial institutions act as a 'trouble-shooter' when firm performance is poor.

In contrast to the Japanese situation, the Taiwanese government does not seem to intervene directly in the operation of a company. Instead, it affects firm performance indirectly through the board of directors. This supports Hypothesis 7. Path Diagram 6-3 shows that the relationship between PERF and BOARD is negative. Based on the significant and positive relationship between BOARD and INST (0.31, t = 2.93) and the significant and positive relationship between BOARD and GOV (0.18, t = 2.46), we find that the board of directors in Taiwan will increase the involvement of the government and financial institutions. It can be argued that faltering performance induces the board of directors to eagerly seek the help of government and the financial institutions, and thereby build a positive relationship between BOARD and GOV/INST. Additionally, BOARD also has a significant relationship with PERF. Therefore, our empirical results suggest that boards in Taiwan play a significant intermediate role in the relationship between the government and financial institutions, whereas the boards in Japan are less effective. To sum up, unlike the Japanese government, the intervention of Taiwanese government goes through the board of directors. Our empirical results support this viewpoint.

The normalised data in Table 6-9 also exhibit the same empirical results. The results in Table 6-9 are consistent with Hypothesis 1 and Hypothesis 2. When firm performance is poor, there will be more intervention of government and financial institutions to help the company solve financial crises. In addition, the relationship between PERF and BOARD is also significant and negative (-0.39, t = -5.05), which is consistent with Hypothesis 3. That is, the argument that companies with poor performance will try to improve the monitoring ability of the board of directors is supported by the result.

Since the measurement variable MANOWN is excluded in the Japanese models owing to data limitations, we rerun the model without it. The empirical results are shown in Table 6-10 to confirm the results in Table 6-9. The relationship between PERF and BOARD is significant and negative (-0.50, t = -4.33), which is consistent with Hypothesis 3 that companies with poor performance will improve the monitoring ability of boards. Although the direct relationship between PERF and GOV is significant and positive, the total effect from PERF on GOV is still

significant and negative (-0.16, t = -3.09) because of the significant and negative indirect effect from PERF on GOV via BOARD (-0.47, t = -3.67). The similar condition also applies to the relationship between PERF and INST. These findings support Hypothesis 1 and Hypothesis 2. Normalised data also report similar results as shown in Table 6-10. From Table 6-10, we can see the advantage of SEM. Unlike multiple regressions, SEM does not only present the direct relationships but also considers the indirect relationships. After combining the direct and indirect relationships, the final results using SEM may be different from the results using multiple regressions, which mainly consider direct relationships alone.

Table 6-9 Path Coefficients: Firm Performance (t) and Governance (t+1), Taiwan

OUTSIDE: the percentage of outside directors. BDOWN: the percentage of board ownership. MANOWN: the percentage of managerial ownership. BD_Q: the percentage of directors who occupy more than three positions in other companies. BANK_D: the ratio of the number of bank representatives on the board to the total number of directors. FINOWN: the ratio of financial institutions shares to total outstanding shares. CROSS: the ratio of institutional shares to total outstanding shares. BLOCK: the percentage of blockholder ownership. GOV_OWN: the ratio of government shares to total outstanding shares. GOV_I: the number of government agencies. GOV_APP: the ratio of the number of political-related directors to the total number of directors. ROE: computed as the net income divided by the shareholder's equity. TSR: the total return on shares assuming dividends are reinvested. ROA: calculated by dividing a company's annual earnings by its total assets.

	2001-2003 data		Normalised data	
Description of path	**path coefficient**	**t value**	**path coefficient**	**t value**
OUTSIDE <-- BOARD	0.18		0.18	
BDOWN <-- BOARD	-0.98	-3.24***	-0.99	-5.50***
MANOWN <-- BOARD	-0.61	-3.36***	-0.65	-5.68***
BD_Q <-- BOARD	0.04	0.78	0.04	1.09
BANK_D <-- INST	0.71		0.61	
FINOWM <-- INST	0.39	6.26***	0.36	9.35***
CROSS <-- INST	0.27	4.45***	0.31	8.16***
BLOCK <-- INST	0.21	3.59***	0.14	3.85***
GOVOWN <-- GOV	1.05		2.74	
GOV_I <-- GOV	0.38	6.28***	0.62	5.75***
GOV_APP <-- GOV	0.66	9.18***	0.25	0.52
ROE <-- PERF	0.93		0.93	
TSR <-- PERF	0.21	4.23***	0.21	6.58***
ROA <-- PERF	0.97	18.33***	0.97	29.13***
Direct Effect				
BOARD --> INST	0.31	2.83***	0.43	4.87***
BOARD --> GOV	0.18	2.46**	0.08	4.43***
PERF --> INST	-0.08	-1.19	-0.03	-0.70
PERF --> GOV	-0.03	-0.59	0.01	0.79
PERF --> BOARD	-0.38	-2.99***	-0.39	-5.05***
Indirect Effect				
PERF--> BOARD --> INST	-0.12	-3.55***	-0.17	-6.54***
PERF --> BOARD --> GOV	-0.07	-2.90***	-0.03	-5.56***
Total Effect				
PERF --> INST	-0.20	-3.19***	-0.20	-4.77***
PERF --> GOV	-0.10	-2.01**	-0.02	-2.61***
Observations	400		1000	
GFI	0.89		0.88	
AGFI	0.83		0.82	
SRMR	0.09		0.09	
RMSEA	0.10		0.11	

* p<0.1; ** p<0.05; *** p<0.01

Table 6-10 Path Coefficients: Firm Performance (t) and Governance (t+1), Taiwan, without MANOWN

Please refer to Table 6-9 for the explanations of variables.

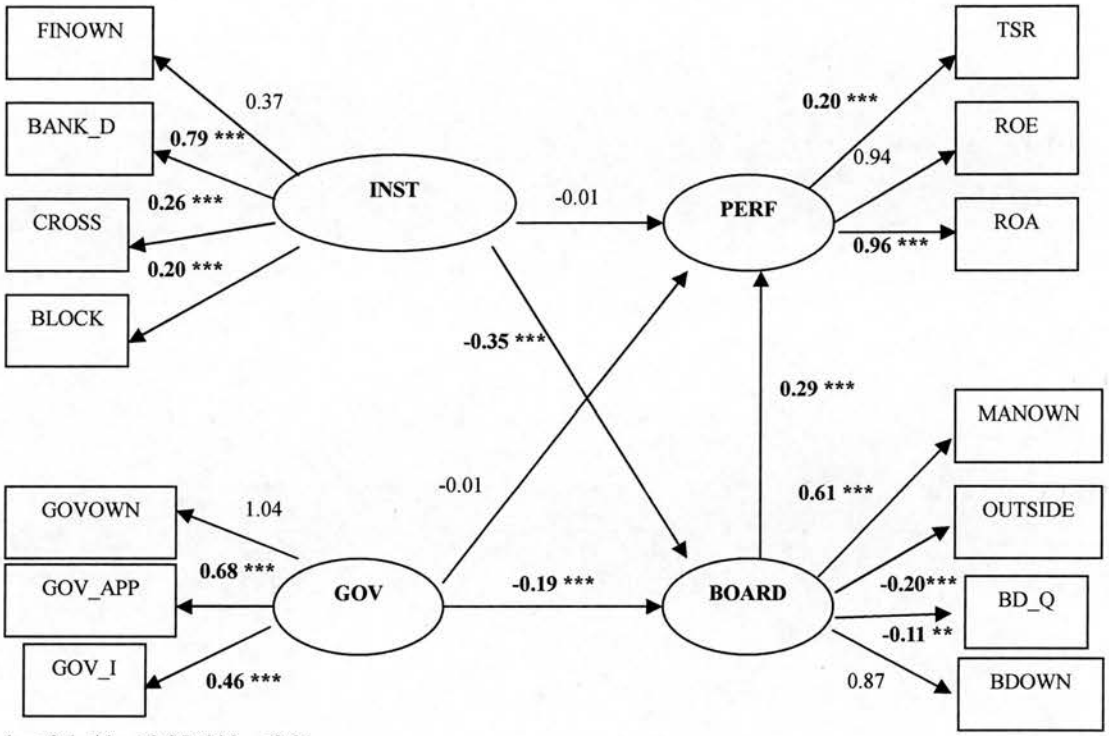
	2001-2003 data		Normalised data	
Description of path	**path coefficient**	**t value**	**path coefficient**	**t value**
OUTSIDE <-- BOARD	0.33		0.35	
BDOWN <-- BOARD	-0.43	-5.23***	-0.38	-8.83***
BD_Q <-- BOARD	-0.02	-0.44	-0.07	-2.05**
BANK_D <-- INST	0.77		0.73	
FINOWM <-- INST	0.39	5.52***	0.37	7.93***
CROSS <-- INST	0.14	2.35**	0.14	3.59***
BLOCK <-- INST	0.19	3.11***	0.24	5.73***
GOVOWN <-- GOV	0.67		0.68	
GOV_I <-- GOV	0.22	4.90***	0.16	5.47***
GOV_APP <-- GOV	1.08	11.46***	1.06	18.09***
ROE <-- PERF	0.98		1.01	
TSR <-- PERF	0.23	4.51***	0.23	7.17***
ROA <-- PERF	0.93	15.29***	0.90	21.02***
Direct Effect				
BOARD --> INST	0.81	5.38***	0.72	9.19***
BOARD --> GOV	0.93	4.31***	0.99	6.91***
PERF --> PRO	0.23	2.71***	0.25	4.33***
PERF --> GOV	0.31	2.34**	0.35	4.52***
PERF --> BOARD	-0.50	-4.33***	-0.43	-6.26***
Indirect Effect				
PERF-->BOARD-->INST	-0.41	-4.33***	-0.31	-5.95***
PERF-->BOARD-->GOV	-0.47	-3.67***	-0.43	-5.12***
Total Effect				
PERF --> INST	-0.18	-2.71***	-0.06	-1.76*
PERF --> GOV	-0.16	-3.09***	-0.08	-2.69***
Observations	400		1000	
GFI	0.90		0.89	
AGFI	0.83		0.82	
SRMR	0.08		0.08	
RMSEA	0.10		0.11	

* p<0.1; ** p<0.05; *** p<0.01

6.3.2 Taiwan: Is subsequent firm performance positively related to such intervention?

This section will examine whether intervention from the government and financial institutions in Taiwan is accompanied by better subsequent firm performance. Path Diagram 6-4 is derived from the hypotheses discussed in Section 4.2.2 and is based on the results in Table 6-11. It demonstrates that INST and GOV will affect PERF directly as well as indirectly through the intermediate variable BOARD.

Path Diagram 6-4: Governance (t) and Firm Performance (t+1), Taiwan



* p<0.1; ** p<0.05; *** p<0.01

Table 6-11 includes the completely standardised coefficients for the hypothesised relationships and the model statistics. Table A4-3 in Appendix 4 includes the structural parameters. The main goodness-of-fit indices are acceptable: GFI equals 0.88 and AGFI equals 0.81. In the alternative index, RMSEA equals 0.11. In the residual analysis, SRMR equals 0.09.

Table 6-11 reports the completely standardised coefficients for the hypothesised

relationships and leads to Path Diagram 6-4. From Path Diagram 6-4, it can be seen that the direct relationship between GOV and PERF is not significant. The direct relationship between INST and PERF is also not significant. The indirect paths, once again, are significant. Through the latent variable, BOARD, the relationship between GOV and PERF is (-0.19)*(0.29), which equals -0.06 (t = -2.55) and is significant at the 5% level. This allows Hypothesis 4-1 to be rejected but supports Hypothesis 4-2[120]. The relationship between INST and PERF is (-0.35)*(0.29), which equals -0.10 (t = -2.90) and is significant at the 1% level. This allows Hypothesis 5-1 to be rejected but supports Hypothesis 5-2[121].

According to the empirical results, even when these troubled companies employ many retired bureaucrats to build an informal network, subsequent firm performance in Taiwanese companies is not better. Because of the insignificant direct path between GOV and PERF, the total effect from GOV on PERF is not significant, as shown in Table 6-11, whereas the total effect from GOV on PERF in the Japanese model (Table 6-5) is significant. Furthermore, Hypothesis 6 is also supported in that the relationship between BOARD and PERF is significant and positive, which supports the supposition that the board with better monitoring ability can improve firm performance in Taiwan. Although some prior studies do not find a significant and positive relationship between the monitoring ability of a board and subsequent firm performance (Mak and Li, 2001; Yermack, 1996; Faccio and Lasfer, 1999; Bhagat and Black, 1999, 2001), our result supports the argument that boards with better monitoring ability will be positively related to subsequent firm performance in Taiwan (Gompers et al., 2003).

Note that although the final conclusion of the Taiwanese model is similar to that of the Japanese model, the processes are different. The direct relationships between GOV/INST and PERF in the Japanese model are significant and negative. In the Taiwanese model, however, GOV influences PERF via the latent variable, BOARD.

---

[120] Hypothesis 4-2: The relationship between political involvement (t) and subsequent firm performance (t+1) will be negative.

[121] Hypothesis 5-2: The relationship between the intervention of financial institutions (t) and subsequent firm performance (t+1) will be negative.

The negative relationship between GOV and BOARD in Taiwan supports the supposition that more political involvement may damage the monitoring ability of the board.

The negative relationship between INST and BOARD supports the supposition that too much intervention from the financial institutions will damage the monitoring ability of the board. Although Japan and Taiwan are similar in board structure, Hypothesis 7 is supported by Taiwanese estimates but not in the Japanese estimates. This may be because most directors in Japan are insiders who may not monitor executives efficiently (Kaplan and Minton, 1994). The normalised data in Table 6-11 also show similar results.

Table 6-12 presents the empirical results without the measurement variable MANOWN. Without this variable, the original data do not report a significant and negative direct relationship between GOV/INST and subsequent firm performance (PERF). Therefore, Hypotheses 4-1, 4-2, 5-1, and 5-2 are not supported. Furthermore, Hypothesis 6, which states that a board with better monitoring ability is positively related to the subsequent firm performance, is also not supported by using original data in Table 6-12. The insignificant relationship between BOARD and PERF results in the insignificant indirect relationship between GOV/INST and PERF and the rejection of Hypothesis 7. The empirical results shown in Table 6-12 illustrate that managerial ownership (MANOWN), which can align the interests of executives with the interests of shareholders, is an important factor in internal monitoring. Without including the variable MANOWN in the latent variable BOARD, the relationship between BOARD and PERF becomes insignificant.

Although the final conclusion of the Taiwanese model is the same as for the Japanese model, the processes are different. The direct relationships between PERF and GOV/INST in the Japanese model are significant and negative, which suggests that political involvement and the intervention from financial institutions are negatively associated with subsequent firm performance directly. In the Taiwanese model, however, GOV influences PERF via the intermediate latent variable, BOARD. The

negative relationship between GOV and BOARD indicates that more political involvement will damage the monitoring ability of the board. At the same time, the unsound board of directors will be negatively associated with subsequent firm performance because these government appointed directors may attempt to extract rents for the ruling party or operate non-profit projects that can implement related policies at the expense of firm performance. The indirect negative relationship between INST and PERF also demonstrates a similar outcome. The negative relationship between INST and BOARD supports the argument that too much intervention on the part of the financial institutions may jeopardise the monitoring ability of a board and thereby result in subsequent poor performance. Thus, the intervention from the financial institutions (INST) may finally be negatively associated with subsequent firm performance (PERF). The detailed comparison between Japanese models and Taiwanese models is discussed in Section 6.4.

Table 6-11 Path Coefficients: Governance (t) and Firm Performance (t+1), Taiwan

BDOWN: the percentage of board ownership. OUTSIDE: the percentage of outside directors. MANOWN: the percentage of managerial ownership. BD_Q: the percentage of directors who occupy more than three positions in other companies. FINOWN: the ratio of financial institutions shares to total outstanding shares. BANK_D: the ratio of the number of bank representatives on the board to the total number of directors. CROSS: the ratio of institutional shares to total outstanding shares. BLOCK: the percentage of blockholder ownership. GOV_OWN: the ratio of government shares to total outstanding shares. GOV_I: the number of government agencies. GOV_APP: the ratio of the number of political-related directors to the total number of directors. ROE: computed as the net income divided by the shareholder's equity. TSR: the total return on shares assuming dividends are reinvested. ROA: calculated by dividing a company's annual earnings by its total assets.

	2001-2003 data		Normalised data	
Description of path	**path coefficient**	**t value**	**path coefficient**	**t value**
BDOWN <-- BOARD	0.87		0.88	
OUTSIDE <-- BOARD	-0.20	-3.34***	-0.14	-3.53***
MANOWN <-- BOARD	0.61	6.79***	0.61	8.25***
BD_Q <-- BOARD	-0.11	-1.92**	-0.03	-0.72
FINOWM <-- INST	0.37		0.41	
BANK_D <-- INST	0.79	6.18***	0.77	10.09***
CROSS <-- INST	0.26	3.33***	0.15	3.90***
BLOCK <-- INST	0.20	3.13***	0.19	4.76***
GOVOWN <-- GOV	1.04		0.42	
GOV_I <-- GOV	0.46	7.43***	0.08	4.83***
GOV_APP <-- GOV	0.68	10.24***	1.74	4.48***
ROE <-- PERF	0.94		0.98	
TSR <-- PERF	0.20	4.01***	0.22	6.97***
ROA <-- PERF	0.96	14.05***	0.94	22.03***
Direct Effect				
INST --> BOARD	-0.35	-4.21***	-0.29	-5.55***
GOV --> BOARD	-0.19	-3.32***	-0.04	-1.98**
INST --> PERF	-0.01	-0.16	-0.02	-0.36
GOV --> PERF	-0.01	-0.25	-0.01	-0.26
BOARD --> PERF	0.29	3.83***	0.21	4.73***
Indirect Effect				
INST --> BOARD --> PERF	-0.10	-2.90***	-0.06	-3.69***
GOV --> BOARD --> PERF	-0.06	-2.55**	-0.01	-1.83*
Total Effect				
INST --> PERF	-0.11	-1.79*	-0.08	-1.80*
GOV --> PERF	-0.07	-1.31	-0.02	-0.75
Observations	400		1000	
GFI	0.88		0.88	
AGFI	0.81		0.81	
SRMR	0.09		0.11	
RMSEA	0.11		0.12	

* p<0.1; ** p<0.05; *** p<0.01

Table 6-12 Path Coefficients: Governance (t) and Firm Performance (t+1), Taiwan, without MANOWN

Please refer to Table 6-11 for the explanations of variables.

	2001-2003 data		Normalised data	
Description of path	**path coefficient**	**t value**	**path coefficient**	**t value**
BDOWN <-- BOARD	0.44		0.47	
OUTSIDE <-- BOARD	-0.36	-5.17***	-0.47	-9.63***
BD_Q <-- BOARD	-0.08	-1.31	-0.04	-1.03
BLOCK <-- INST	0.15		0.18	
FINOWM <-- INST	0.39	2.55**	0.31	4.95***
BANK_D <-- INST	0.82	2.65***	0.56	5.45***
CROSS <-- INST	0.11	1.84*	0.17	3.91***
GOV_I <-- GOV	0.45		0.23	1.83*
GOVOWN <-- GOV	1.04	7.11***	1.75	
GOV_APP <-- GOV	0.64	9.16***	0.60	1.99**
ROA <-- PERF	0.89		0.93	
TSR <-- PERF	0.23	4.75***	0.23	7.27***
ROE <-- PERF	1.01	12.04***	0.99	20.38***
Direct Effect				
INST --> BOARD	-0.61	-2.37**	-0.46	-3.88***
GOV --> BOARD	-0.50	-4.67***	-0.46	-1.88*
INST --> PERF	0.55	0.67	0.32	1.73*
GOV --> PERF	0.46	0.72	0.30	1.42
BOARD --> PERF	1.06	0.82	0.75	2.14**
Indirect Effect				
INST --> BOARD --> PERF	-0.65	-0.77	-0.35	-1.85*
GOV --> BOARD --> PERF	-0.53	-0.81	-0.35	-1.71*
Total Effect				
INST --> PERF	-0.10	-1.33	-0.03	-2.03**
GOV --> PERF	-0.07	-1.23	-0.05	-1.93*
Observations	400		1000	
GFI	0.88		0.87	
AGFI	0.80		0.79	
SRMR	0.09		0.1	
RMSEA	0.12		0.13	

* p<0.1; ** p<0.05; *** p<0.01

6.4 Comparison and Discussion

From Section 6.2.1 and Section 6.3.1, we can observe that the overall final results in the Japanese and Taiwanese models are identical, i.e. firm performance is negatively related to the subsequent intervention of governments and financial institutions. Compared to the western corporate governance mechanism, which is based on the assumption that a company should maximise the interests of shareholders, the Japanese system is set up to promote the interests of the company, the employees and the whole society rather than just the shareholders (Monks and Minow, 2004). In this kind of system the government sees itself as a protector of domestic industry (Analytica, 1992). Given this phenomenon, when a company does not perform well or has a financial crisis that causes instability, the government, banks, and other cross-holding institutions will intervene in the operation of that company. Therefore, in Japan the government and financial institutions are regarded as trouble-shooters. This argument is supported by the empirical results from Japan and Taiwan. When firm performance is poor, the government and financial institutions will appoint retired bureaucrats and representatives to the board to exercise the monitoring function. These empirical findings suggest that the system of *amakudari* is not used only as a reward system for the government bureaucracy. If it is used as a reward system alone, the relationship between performance and political involvement should be insignificant. However, our results do not support this that the system of *amakudari* is used as a reward system alone. Our results are consistent with those of Van Rixtel and Hassink (2002) that the system of *amakudari* in Japan and Taiwan is used as a trouble-shooter.

However, there are differences between the two countries. Although the total effects from firm performance (PERF) on subsequent political involvement (GOV) and the intervention of financial institutions (INST) are both significant and negative in Japan and Taiwan, the paths are different. In Japan, we find that the indirect relationships, PERF→BOARD→GOV and PERF→BOARD→INST, are not significant (Tables 6-3 and 6-4). These findings imply that the board of directors in Japan does not play an intermediate role between a company and the

government/financial institutions. From a company's viewpoint, a company with poor performance is willing to accept government appointed directors (*amakudari*) and representatives from financial institutions to build a harmonious relationship so it can ask them to help solve its financial problems. However, the board of directors in Japan cannot attract or refuse the intervention and support from the government and financial institutions, as the relationships between BOARD and GOV/INST are not significant.

In Taiwan, on the other hand, the influences from firm performance (PERF) to political involvement (GOV) and to the intervention of financial institutions (INST) are indirect, as shown in Table 6-9. The direct path from firm performance (PERF) to the board (BOARD) is negative. Moreover, the direct path from the board (BOARD) to political involvement (GOV) is significant and positive. This finding is consistent with the supposition that a company with poor firm performance will improve the monitoring ability of the board of directors who will subsequently negotiate for more support from the government and financial institutions. The board of directors in Taiwan plays an intermediate role on linking the company and the government/financial institutions. In Japan, although the argument that the company will improve the monitoring ability of the board when firm performance is poor is supported, the board of directors does not play an intermediate role between the company, the government, and other financial institutions. To sum up, governments and financial institutions in Japan and Taiwan will intervene in companies with poor performance. This argument is supported by the negative relationship between PERF and GOV/INST.

From Sections 6.2.2 and 6.3.2, due to the insignificant relationship between BOARD and PERF, we can conclude that the improvement of the board in Japan is not positively related to subsequent firm performance. If the government and financial institutions play a monitoring role, the company that experiences intervention by the government and financial institutions should have better firm performance. However, intervention from the government and financial institutions is not positively associated with subsequent firm performance. On the contrary, subsequent firm

performance is negatively associated with such intervention by the government and financial institutions. This result is similar to that found by Horiushi and Shimuzu (2001) who conclude that political involvement will jeopardise capital adequacy, but contradicts the results found by Van Rixtel and Hassink (2002) who demonstrate that political involvement will improve profitability. The intervention of governments is commonly regarded as inefficient (Shleifer and Vishny, 1994; Shleifer, 1998) because there exists the danger that government will pursue its own interests at the expense of those of the shareholders[122]. Our results provide indirect evidence for this argument.

On the other hand, this thesis also examines whether subsequent firm performance is associated with intervention of government and financial institutions. Unlike the Japanese boards, which have no significant influence on subsequent firm performance, in Taiwan the monitoring ability of a board is positively associated with subsequent firm performance. Other empirical results from Taiwan are similar to the results from Japan. From Table 6-11, we can also observe that the relationship between political involvement (GOV) and subsequent firm performance (PERF) is significant and negative, as is the relationship between the intervention of financial institutions (INST) and subsequent firm performance (PERF). One point that deserves to be mentioned is that the significant negative relationships between GOV/INST and the subsequent firm performance (PERF) are direct in Japan (Table 6-5), whereas they are indirect in Taiwan (Table 6-11). In Taiwan, the negative relationships between GOV/INST and subsequent firm performance (PERF) go through the board of directors (BOARD)[123]. Again, this finding indicates that the board of directors in Taiwan plays an intermediate role between government, the financial institutions, and companies. Based on the differences between Japanese and Taiwanese models, we find that the board of directors in Taiwan plays a more

---

[122] Horiushi and Shimuzu (2001, p.573) indicate that "there exists the danger that the regulator will collude with regulated banks to pursue their benefits at the expense of taxpayers, thereby reducing effectiveness of financial supervision."

[123] If we exclude MANOWN from the latent variable BOARD, the relationship BOARD→PERF would be insignificant, and thereby results in the insignificant total effect from GOV/INST on subsequent PERF. However, the exclusion of MANOWN does not influence the outcome that government and financial institutions are more likely to intervene in the operation of troubled companies.

influential role in companies.

To sum up, both Japanese and Taiwanese models support the hypothesis that the system of *amakudari* is not used as a reward system but for trouble-shooting (Van Rixtel and Hassink, 2002). These retired bureaucrats from government institutions, such as MoF and BoJ in Japan and MOEA in Taiwan, are sent to troubled companies in case of a financial crisis. The representatives from financial institutions, such as banks, are also dispatched to the boards to exercise the *ex-post* monitoring functions. Both bureaucrats and bank representatives can exercise their monitoring function and use their political networks to help the company. The direct intervention of government and financial institutions in Japan includes extending the deadline of loans, providing emergency financing, and reducing interest rate or loans. For example, Industrial Bank of Japan (IBJ) provided Japan Line bridging loan for scrapping of surplus tankers, implemented loan rollovers and interest rate reductions, and wrote off 50 billion yen of 160 billion yen loans in 1989. Meanwhile, the intervention in Taiwan is indirect. For example, in order to pave the road for the next election, the ruling party will engage in the infrastructure which may not be necessary. The government-appointed directors and bank representatives may lobby and use their networks to bid on infrastructure projects favoured by the government at a high price. The government may also give better treatments to companies which have a good connection with it. The difference between Japan and Taiwan may origin from the political environment. Unlike the one-party environment in Japan[124], the two-party system in Taiwan causes the need for companies to build relationships with the possible succeeding ruling party.

Unfortunately, the intervention of government and financial institutions is negatively related to subsequent firm performance. The result is consistent with the argument that government is inefficient (e.g. Shleifer and Vishny, 1994; Shleifer, 1998; Vining and Boardman, 1992; Dewenter and Malatesta, 2001; Sun et al., 2002; Beck and Levine, 2002). The negative relationship between the intervention of financial institutions and subsequent firm performance is consistent with the study by Morck

[124] The Liberal Democratic Party (LDP) is the biggest party in Japan. In Taiwan, the Kuo-Ming-Tang (KMT) and Democratic Progressive Party (DPP) are the two biggest parties.

and Nakamura (1999), who found that companies experience negative share returns in the year following bank director appointments, but contrasts with the findings of Kang and Shivdasani (1995). According to the findings in this thesis, we support the supposition that the intervention of government and financial institutions may help the companies solve crises in the beginning but subsequent firm performance is negatively related to such intervention. Therefore, companies in Japan and Taiwan should avoid seeking temporary relief from government and financial institutions regardless of the consequences. Table 6-13 summarise the hypotheses and findings.

Table 6-13 The summary of hypotheses and findings_performance

Hypothesis	Argument	Japan	Taiwan
Hypothesis 1	The relationship between firm performance (t) and political involvement (t+1) is negative	Accept	Accept
Hypothesis 2	The relationship between firm performance (t) and the intervention of financial institutions (t+1) is negative.	Accept	Accept
Hypothesis 3	The relationship between firm performance (t) and the monitoring ability of the board (t+1) is negative.	Accept	Accept
Hypothesis 4-1	The relationship between political involvement (t) and the subsequent firm performance (t+1) should be positive.	Reject	Reject
Hypothesis 4-2	The relationship between political involvement (t) and the subsequent firm performance (t+1) will be negative.	Accept	Accept
Hypothesis 5-1	The relationship between the intervention of financial institutions (t) and the subsequent firm performance (t+1)	Reject	Reject
Hypothesis 5-2	The relationship between the intervention of financial institutions (t) and the subsequent firm performance (t+1)	Accept	Accept
Hypothesis 6	The relationship between the monitoring ability of the board (t) and the subsequent firm performance (t+1) is	Reject	Accept
Hypothesis 7	The board of directors may moderate the relationship between performance and the intervention of government and financial institutions.	Reject	Accept

In addition to firm performance, this thesis also examines the relationships between the intervention of government and financial institutions and DOI through the board of directors. Based on the introduction in Chapter 3 and the hypotheses in Section 4.3, the following chapter will discuss the empirical results, which are obtained by using SEM.

Chapter Seven
Empirical Analysis of Political Involvement and the Degree of Internationalisation

7.1 Introduction

The review of the relevant literature in Chapter 3 and the hypotheses developed in Chapter 4 highlighted the interaction between the degree of internationalisation (DOI) and the intervention of governments and financial institutions through the board of directors in Japan and Taiwan. Currently, the internationalisation theories are largely based on western MNCs. These theories usually neglect the role played by the government. In the Asian context, home governments, however, play a critical role in the promotion of outward foreign direct investment (FDI) and international expansion. Furthermore, different stages of economic development also affect the relationship between political involvement and DOI (Aggarwal and Agmon, 1990). Unfortunately, most studies concerning the relationship between internationalisation and political involvement under different economic environments and legal systems are contextual (Aggarwal and Agmon, 1990). If the intervention of governments and financial institutions has a significant influence on internationalisation, it is important to use quantitative methods in addition to any contextual description to examine it.

Based on the review of literature in Chapter 3, relevant hypotheses were developed in Section 4.3.1 and Section 4.3.2. The question we ask in Section 4.3.1 is do companies with a higher DOI seem to experience more or less intervention of governments and financial institutions? We will examine whether DOI is related to subsequent intervention of governments and financial institutions. Due to the dual roles of the government and financial institutions as supporters and regulators, the relationship between DOI and intervention of government and financial institutions may be negative or positive. In Section 4.3.2, the main question is whether the

intervention of governments and financial institutions is related to the subsequent DOI. Since intervention of governments and financial institutions is usually regarded as inefficient, the subsequent DOI may be negatively affected. In contrast, the government and financial institutions also play the role as supporters. For example, the Singaporean government provided generous support, such as tax incentives, finance schemes, and training, to foster the development of internationalisation (Sim and Pandian, 2003). Therefore, the subsequent DOI may be positively related to such intervention of governments and financial institutions.

As in Chapter 6, this chapter adopts the methodology of structural equation modelling (SEM). The primary focus of this chapter is in exploring the relationship between intervention of governments and financial institutions, the monitoring ability of the board of directors, and DOI. In Section 7.2, we examine these relationships in Japan and in Section 7.3 we investigate these relationships in Taiwan. For each country we examine two issues. Section 7.2.1 and 7.3.1 examine whether DOI is related to subsequent intervention of governments and financial institutions through the boards of directors in Japan and Taiwan respectively. In Section 7.2.2 and 7.3.2 we investigate whether intervention of governments and financial institutions is associated with subsequent DOI through the boards of directors in Japan and Taiwan respectively.

By using SEM, we can examine direct and indirect relationships simultaneously and thus obtain the total effects. We find that the relationships between intervention of governments and financial institutions, the board of directors, and DOI are different in Japan and in Taiwan. The differences in the findings between Japan and Taiwan will be discussed in Section 7.4 and a conclusion will be drawn.

7.2 Japan

7.2.1 Japan: Is the degree of internationalisation related to the subsequent intervention of governments and financial institutions?

In this section, we examine the relationship between DOI and subsequent intervention of governments and financial institutions. The question in this section is do companies with a higher DOI seem to have more or less intervention of governments and financial institutions? Therefore, this section will discuss the relationships between four latent variables: the monitoring ability of the board (BOARD), the intervention of financial institutions (INST), political involvement (GOV), and DOI. The composition of latent variables – BOARD, INST, and GOV – is the same as in Section 6.2.1. The final latent variable, DOI, is composed of four measurement variables: foreign ownership (FOROWN), the ratio of foreign sales to total sales (FSTS), the ratio of foreign assets to total assets (FATA), and the number of listings on foreign exchanges (FSE). Table 7-1 provides the descriptive statistics for all measurement variables.

Table 7-1 Summary Statistics, Japan, 2001-2003, 609 Observations_DOI

BDOWN: the percentage of board ownership. OUTSIDE: the percentage of outside directors. BD_Q: the percentage of directors who occupy more than three positions in other companies. FINOWN: the ratio of financial institutions shares to total outstanding shares. BANK_D: the ratio of the number of bank representatives on the board to the total number of directors. CROSS: the ratio of institutional shares to total outstanding shares. BLOCK: the percentage of blockholder ownership. GOV_OWN: the ratio of government shares to total outstanding shares. GOV_I: the number of government agencies. GOV_APP: the ratio of the number of political-related directors to the total number of directors. GAKUBATSU: the ratio of the number of graduates from the elite universities (Tokyo, Kyoto, Waseda Hitotsubashi, and Keio) to the total number of executives in the highest board positions. FOROWN: the ratio of foreign shares to total outstanding shares. FSTS: the ratio of foreign sales to total sales. FATA: the ratio of foreign assets to total assets. FSE: the number of listings on foreign exchanges.

Latent variable	Measurement Variable	Observations	Mean	St. Dev.	Max	Min
BOARD	BDOWN (%)	609	0.55	2.66	37.43	0.00
	OUTSIDE (%)	609	17.22	9.38	53.33	0.00
	MANOWN (%)	609	---	---	---	---
	BD_Q (%)	609	6.42	10.23	53.85	0.00
INST	FINOWN (%)	609	45.01	11.58	68.83	3.91
	BANK_D (%)	609	5.44	7.72	60.00	0.00
	CROSS (%)	609	13.41	12.46	86.00	0.70
	BLOCK (%)	609	38.82	10.82	81.59	17.45
GOV	GOVOWN (%)	609	0.64	5.69	66.74	0.00
	GOV_I	609	1.82	5.95	63.00	0.00
	GOV_APP (%)	609	3.08	5.15	33.33	0.00
	GAKUBATSU (%)	609	53.37	20.07	100.00	5.56
DOI	FOROWN (%)	609	18.09	12.30	68.46	0.63
	FSTS (%)	609	18.64	19.57	86.58	0.00
	FATA (%)	609	13.21	15.46	78.24	0.00
	FSE	609	0.52	1.27	11.00	0.00

Table 7-2 shows the results of the Kolmogorov-Smirnov test. From this table we can observe that the non-normality problem of the original data is significantly improved by the averaging method because most variables follow a normal distribution. If we have more observations, the averaging method can make the data more normally distributed.

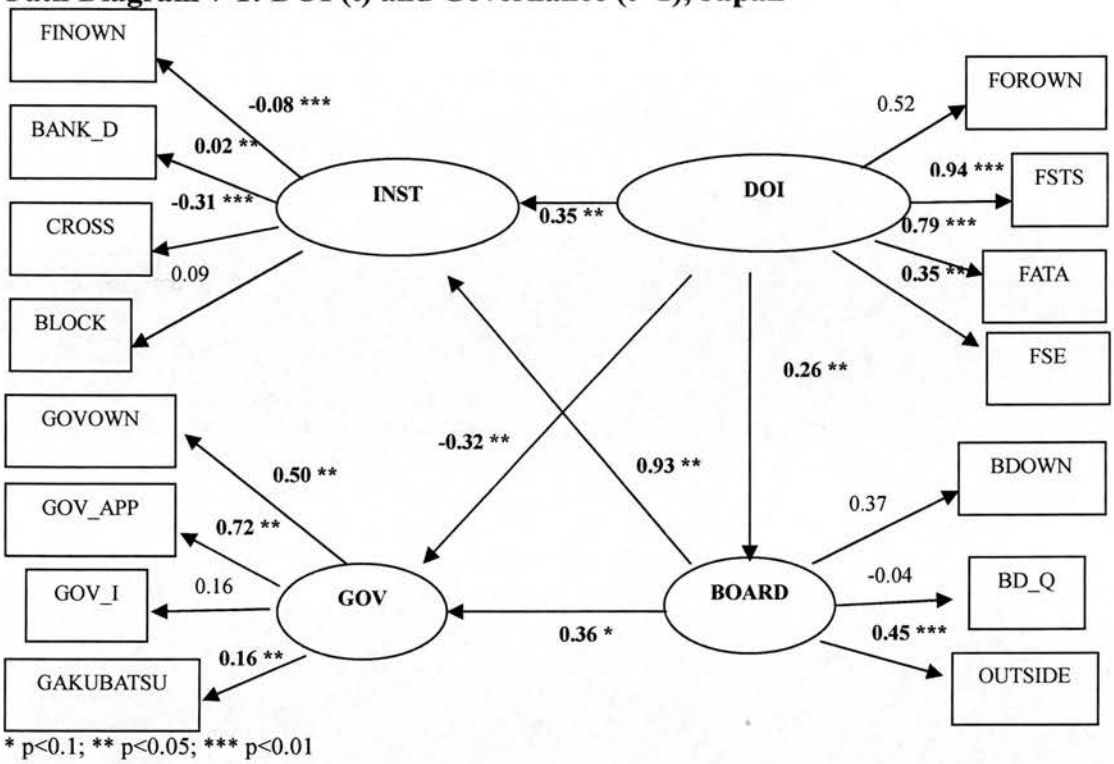
Table 7-2 Kolmogorov-Smirnov Test for Japanese Data_DOI

Please refer to Table 7-1 for the explanations of variables.

	Orgianal Data (N=406)		Normalised Data (N=1000)	
Variables	Kolmogorov-Smirnov Z	Significance (2-tailed)	Kolmogorov-Smirnov Z	Significance (2-tailed)
BDOWN	8.463	0.000	2.245	0.000
OUTSIDE	2.527	0.000	0.602	0.861
BD_Q	5.959	0.000	0.970	0.304
FINOWN	1.371	0.047	0.428	0.993
BANK_D	4.795	0.000	0.997	0.273
CROSS	4.087	0.000	1.007	0.262
BLOCK	2.698	0.000	0.896	0.398
GOVOWN	10.235	0.000	1.709	0.006
GOV_I	7.548	0.000	2.160	0.000
GOV_APP	7.032	0.000	1.082	0.192
GAKUBATSU	1.150	0.142	0.526	0.945
FOROWN	1.984	0.001	0.751	0.626
FSTS	3.435	0.000	0.735	0.652
FATA	4.070	0.000	0.749	0.628
FSE	8.614	0.000	1.366	0.048

Based on the hypotheses in Section 4.3.1 and the results in Table 7-3, we are able to draw Path Diagram 7-1. Table 7-3 presents the model statistics and the completely standardised coefficients. The results are also shown in Path Diagram 7-3. Structural parameter estimates, which are estimated by SEM, are shown in Table A3-5 and A3-6 in Appendix 3. The model statistics presented in Table 7-3 indicate a moderate model fit. GFI (goodness-of-fit index) equals 0.86, and AGFI (adjusted goodness-of-fit index) equals 0.80. In the alternative index, RMSEA (root mean square error of approximate) equals 0.09. In the residual analysis, SRMR (standardised root mean square residual) equals 0.11.

Path Diagram 7-1: DOI (t) and Governance (t+1), Japan



* p<0.1; ** p<0.05; *** p<0.01

From Path Diagram 7-1 and Table 7-3, we can observe that the direct relationship between DOI and BOARD is significant and positive (0.26, t = 2.41). This finding is consistent with Hypothesis 10, which states that in order to manage the increased complexity resulting from a higher DOI, the monitoring ability of a board will be improved. This finding is also consistent with the argument that companies will adapt their governance mechanisms to address the information processing needs that are created by a higher DOI (Chandler, 1962; Sanders and Carpenter, 1998). Sanders and Carpenter (1998) find that DOI is positively related to the ratio of outside directors and board size. They show that one percentage point increase on DOI will result in a 5% increase in board size and a 15% increase in the ratio of outside directors[125]. Similar to the results in Sanders and Carpenter (1998), the path coefficient between DOI and the ratio of outside directors in our research is 0.12[126], which suggests that one percentage point increase on the standard deviation of DOI will result in a 12% increase on the standard deviation of the ratio of outside

[125] After including two interaction variables (DOI*board size and DOI*CEO long-tem pay mix), the coefficient of DOI is positive and significant; otherwise, the coefficient of DOI is not significant.

[126] The path coefficient of the relationship between the measurement variable OUTSIDE and the latent variable BOARD is 0.45. Therefore, the path coefficient between DOI and the ratio of outside directors (OUTSIDE) in our research is (0.26)*(0.45), which equals 0.12.

directors.

From Table 7-3, we can also observe that the direct relationship between GOV and DOI is significant and negative (-0.32, t = -2.05). After including the insignificant indirect relationship between GOV and DOI, which adopts the latent variable BOARD as an intermediate, the total effect from DOI on GOV is still negative and significant at the 5% level (-0.23, t = -2.05). This finding does not support Hypothesis 8-2, which states that the relationship between GOV and DOI is positive because a higher DOI will supply stronger incentives for the government to regulate and intervene. However, this result does support Hypothesis 8-1, which states that the relationship between GOV and DOI is negative. Based on the discussion in Section 3.2.2 and the hypotheses in Section 4.3.1, different stages of internationalisation will have different influences on political involvement (Aggarwal and Agmon, 1990; Sim and Pandian, 2003). In the latter stages when DOI is higher, political involvement from the home country decreases (Aggarwal and Agmon, 1990). The significant and negative relationship between DOI and GOV implies that the internationalisation process in Japan is in the latter stages, where the government is "a reluctant partner" (Aggarwal and Agmon, 1990, p.175). Furthermore, since the government is commonly regarded as inefficient, companies that gain political power from a high DOI may refuse intervention from the government. The automobile industry, the most competitive industry in Japan, is a good example (Porter et al., 2000)[127].

Conversely, the data in Table 7-3 presents a significant and positive direct relationship between DOI and INST (0.35, t=2.15), which means that a higher DOI is associated with more involvement from financial institutions. This finding is consistent with Hypothesis 9 and Tihanyi et al. (2003), who conclude that financial institutions are more willing to invest in companies with higher DOI. In addition to

[127] The word "competitive" in Porter et al. (2000) can be defined as "a higher ratio of foreign sales". In order not to create competition for Toyota, Nissan, and other Japanese automobile companies, the Ministry of International Trade and Industry (MITI) tried to prevent Honda from producing cars in the early 1960s (Tsuruta, 1984; Porter et al., 2000). Honda, however, ignored this suggestion because it is based on government policy, instead of profit maximising. Please refer to Section 3.2.2 for more information.

the direct path, the indirect path from DOI to INST via BOARD is also positive and significant at the 10% level (0.24, t = 1.86). After considering the indirect effect, which goes through the latent variable BOARD, the total effect from DOI on INST (0.59, t = 3.45) is positive and significant at the 1% level. Compared to the results based on original data, those based on normalised data in Table 7-3 exhibit similar results.

Since the Taiwanese model excludes the measurement variable GAKUBATSU due to data unavailability, Table 7-4 reports the empirical results without it. After deleting this variable, there is still a direct negative relationship between DOI and GOV (-0.36, t = -2.63). The direct relationship between DOI and BOARD is also positive and significant at the 5% level (0.47, t = 2.37). After considering the indirect path from DOI to GOV via BOARD, the total effect from DOI on GOV is significant and negative (-0.08, t = -2.74). Therefore, Hypothesis 8-1 and Hypothesis 10 are still supported, even after excluding the variable GAKUBATSU. By using normalised data to confirm the results, we still obtain a significant and negative direct relationship between DOI and GOV. The total effect from DOI on GOV is negative and significant at the 1% level (-0.08, t = -2.74). This finding is consistent with Hypothesis 8-1.

According to Hypothesis 14, the board of directors may mediate the relationship between DOI and intervention of government and financial institutions. Given the results in Table 7-3 using original data, we can conclude that the board of directors in Japan plays an intermediate role between the companies and financial institutions because the indirect relationship between DOI and INST via BOARD is significant. However, the indirect relationship between DOI and GOV via BOARD is insignificant in Table 7-3, which makes the intermediate role of the board in Japan less robust. Nevertheless, compared to the results in Section 6.2.1, the positive and significant BOARD→INST and BOARD→GOV in Table 7-3 reveal that the boards in Japan are eager to require support from government and financial institutions in terms of DOI rather than firm performance.

Table 7-3 Path Coefficients: DOI (t) and Governance (t+1), Japan

BDOWN: the percentage of board ownership. OUTSIDE: the percentage of outside directors. BD_Q: the percentage of directors who occupy more than three positions in other companies. BLOCK: the percentage of blockholder ownership. BANK_D: the ratio of the number of bank representatives on the board to the total number of directors. FINOWN: the ratio of financial institutions shares to total outstanding shares. CROSS: the ratio of institutional shares to total outstanding shares. GOV_I: the number of government investors. GOVOWN: the ratio of government shares to total outstanding shares. GOV_APP: the ratio of the number of political-related directors to the total number of directors. GAKUBATSU: the ratio of the number of graduates from the elite universities (Tokyo, Kyoto, Waseda Hitotsubashi, and Keio) to the total number of directors in the board. FOROWN: the ratio of foreign shares to total outstanding shares. FSTS: the ratio of foreign sales to total sales. FATA: the ratio of foreign assets to total assets. FSE: the number of listings on foreign exchanges.

	2001-2003 data		Normalised data	
Description of path	**path coefficient**	**t value**	**path coefficient**	**t value**
BDOWN <-- BOARD	0.37		0.29	
OUTSIDE <-- BOARD	0.45	3.49***	0.22	5.00***
BD_Q <-- BOARD	-0.04	-0.57	-0.05	-1.38
BLOCK <-- INST	0.09		0.52	
FINOWM <-- INST	-0.08	-6.18***	-0.52	-9.98***
BANK_D <-- INST	0.02	2.51**	0.07	3.34***
CROSS <-- INST	-0.31	-3.25***	-1.82	-5.04***
GOV_I <--GOV	0.16		0.08	2.39**
GOVOWN <-- GOV	0.50	2.42**	0.92	10.15***
GOV_APP <-- GOV	0.72	2.36**	0.46	
GAKUBATSU <-- GOV	0.16	2.34**	0.26	7.11***
FOROWN <-- DOI	0.52		0.51	
FSTS <-- DOI	0.94	10.35***	0.95	15.38***
FATA <-- DOI	0.79	10.43***	0.77	16.09***
FSE <-- DOI	0.35	6.09***	0.32	9.24***
Direct Effect				
BOARD --> INST	0.93	2.46**	0.28	4.57***
BOARD --> GOV	0.36	1.72*	0.67	6.09***
DOI --> INST	0.35	2.15**	0.05	1.93*
DOI --> GOV	-0.32	-2.05**	-0.21	-3.05***
DOI --> BOARD	0.26	2.41**	0.17	1.77*
Indirect Effect				
DOI-->BOARD-->INST	0.24	1.86*	0.05	1.68*
DOI-->BOARD-->GOV	0.09	1.46	0.11	1.72*
Total Effect				
DOI --> INST	0.59	3.45***	0.10	5.12***
DOI --> GOV	-0.23	-2.05**	-0.10	-2.75***
Observations	406		1000	
GFI	0.86		0.85	
AGFI	0.80		0.78	
SRMR	0.09		0.10	
RMSEA	0.11		0.12	

* p<0.1; ** p<0.05; *** p<0.01

Table 7-4 Path Coefficients: DOI (t) and Governance (t+1), Japan without GAKUBATSU

Please refer to Table 7-3 for the explanations of variables.

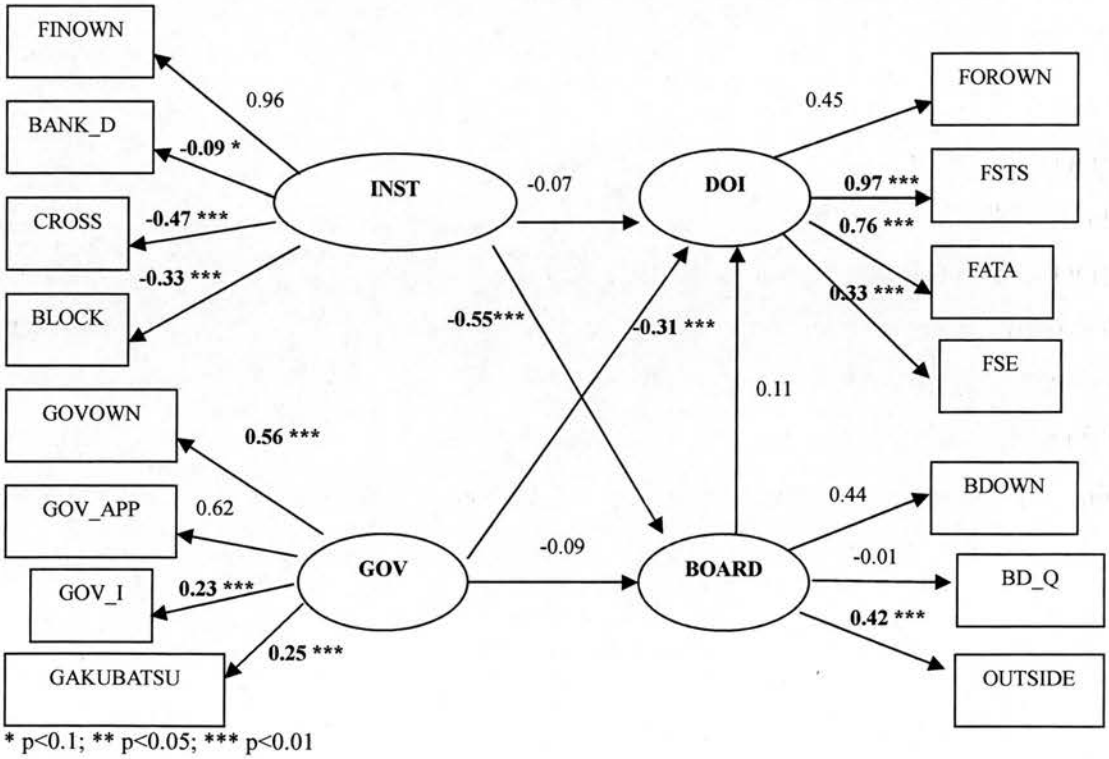
	2001-2003 data		Normalised data	
Description of path	**path coefficient**	**t value**	**path coefficient**	**t value**
BDOWN <-- BOARD	0.23		0.16	
OUTSIDE <-- BOARD	0.17	2.86***	0.83	2.80***
BD_Q <-- BOARD	-0.02	-0.48	-0.06	-1.59
FINOWM <-- INST	0.09		0.56	
BANK_D <-- INST	-0.21	-0.53	-0.13	-3.63***
CROSS <-- INST	1.89	0.53	-0.91	-12.00***
BLOCK <-- INST	-1.45	-0.53	-0.54	-13.39***
GOVOWN <-- GOV	0.95		0.47	
GOV_I <-- GOV	0.08	1.43	0.11	3.01***
GOV_APP <-- GOV	0.37	4.37***	0.90	5.34***
FOROWN <-- DOI	0.52		0.48	
FSTS <-- DOI	0.94	10.35***	0.99	14.07***
FATA <-- DOI	0.79	10.44***	0.74	15.36***
FSE <-- DOI	0.35	6.10***	0.34	9.53***
Direct Effect				
BOARD --> INST	-0.34	-0.53	-0.26	-3.41***
BOARD --> GOV	0.59	4.17***	0.34	3.13***
DOI --> INST	0.06	0.41	0.21	4.72***
DOI --> GOV	-0.36	-2.63**	-0.26	-4.04***
DOI --> BOARD	0.47	2.37**	0.23	2.49**
Indirect Effect				
DOI-->BOARD-->INST	-0.16	-0.52	-0.06	-2.46**
DOI-->BOARD-->GOV	0.28	2.17**	0.08	2.33**
Total Effect				
DOI --> INST	-0.10	-0.54	0.15	4.11***
DOI --> GOV	-0.08	-2.74***	-0.18	-3.82***
Observations	406		1000	
GFI	0.87		0.86	
AGFI	0.81		0.79	
SRMR	0.09		0.09	
RMSEA	0.11		0.12	

* p<0.1; ** p<0.05; *** p<0.01

7.2.2 Japan: Is the subsequent degree of internationalisation positively related to such intervention?

The second question we ask regarding DOI is whether political involvement (GOV) and the intervention of financial institutions (INST) affect the subsequent DOI. Based on the hypotheses in Section 4.3.2, we can obtain Path Diagram 7-2, which shows that three latent variables – BOARD, INST, and GOV – are related to DOI. Table 7-5 shows the completely standardised coefficients. Original structural parameter estimates, which are estimated by SEM, are shown in Table A3-7 and A3-8 in Appendix 3. From Table 7-5, we can obtain that GFI is equal to 0.88, AGFI equals 0.82, SRMR equals 0.09, and RMSEA equals 0.10. The goodness-of-fit of this model is acceptable.

Path Diagram 7-2: Governance (t) and DOI (t+1), Japan



* p<0.1; ** p<0.05; *** p<0.01

As seen In Table 7-5, the direct relationship between GOV and the subsequent DOI is negative and significant at the 1% level (-0.31, t = -3.16). After including the indirect path from GOV to DOI via BOARD, the total effect from GOV on the subsequent

DOI is still negative and significant at the 1% level (-0.32, t = -3.26). This finding supports Hypothesis 11-2 rather than Hypothesis 11-1. The intervention from the Japanese government, such as government ownership and government appointed directors, is not positively related to the subsequent DOI. Instead, this kind of intervention is associated with the subsequent DOI.

The total effect from INST on the subsequent DOI is also negative and significant at the 10% level (-0.13, t = -1.74). This finding is not consistent with Hypothesis 12 or Tihanyi et al. (2003) who find that institutional ownership has a significant and positive effect on DOI in the US. Similar to the relationship between the intervention of financial institutions (INST) and the subsequent firm performance (PERF), the negative relationship between INST and the subsequent DOI in Japan indicates that the intervention of financial institutions is not accompanied with a higher DOI.

It is clearly that the finding in Table 7-5 does not support Hypothesis 13, which states that the relationship between the monitoring ability of a board (t) and the subsequent DOI (t+1) is positive. The direct relationship between BOARD and the subsequent DOI is not significant, which means the monitoring ability of Japanese boards does not have a significant influence on increasing the subsequent DOI. This insignificant relationship between BOARD and DOI also results in the rejection of Hypothesis 14 because the indirect relationships, INST→BOARD→DOI and GOV→BOARD→DOI, are not significant.

In order to confirm the results using original data, the results using normalised data are also included in Table 7-5. The empirical results, which use normalised data, are similar to the results using the original data in Table 7-5. The significant and negative direct relationship between GOV and the subsequent DOI is also found by using normalised data. After including the indirect path – the path from DOI to GOV via BOARD – the total effect from GOV on DOI is still negative and significant at the 1% level (-0.23, t = -4.51). By using normalised data, the relationship between BOARD and the subsequent DOI is positive and significant at the 10% level (0.11, t = 1.75). Hypothesis 13, which states that the relationship between the monitoring

ability of a board and subsequent DOI is positive, is supported by normalised data. However, the relationship between BOARD and the subsequent DOI is insignificant when we use the original data in Table 7-5. Although normalised data follow the assumption that measurement variables should be normally distributed in SEM, they are not real but manufactured by researchers. Hence, the results obtained by using normalised data should be carefully interpreted and used for reference only.

Table 7-6 shows the results that exclude the measurement variable GAKUBATSU from the model. The results without this variable are similar to those with it. The direct relationship between GOV and DOI is still negative and significant at the 5% level (-0.24, t = -2.31), which is consistent with Hypothesis 11-2 rather than Hypothesis 11-1. Hypothesis 12[128] is not supported in Table 7-6 using either the non-normalised original data or the normalised data. The relationship between the intervention from financial institutions (INST) and the subsequent DOI is not significant. Hypothesis 13, which states that the relationship between the monitoring ability of a board and the subsequent DOI is positive, is supported by using normalised data rather than by using original data. Since we manufacture 1,000 observations, the results obtained by using normalised data should be carefully interpreted and used for reference only.

From the information in Table 7-5 and Table 7-6, we can conclude that higher political involvement (GOV) and higher intervention from financial institutions are negatively associated with the subsequent DOI in Japan. These findings are consistent with the argument that government inefficiency will jeopardise the internationalisation of a company (Porter et al., 2000) but contradict Tihanyi et al. (2003) who conclude that institutional ownership leads to higher subsequent DOI. Moreover, similar to firm performance, which is discussed in Section 6.6.2, the boards of directors in Japan do not play a significant intermediate role between the Japanese government/financial institutions and Japanese companies.

[128] Hypothesis 12: The intervention of financial institutions (t) will result in higher degree of internationalisation (t+1)

Table 7-5 Path Coefficients: Governance (t) and DOI (t+1), Japan

BDOWN: the percentage of board ownership. OUTSIDE: the percentage of outside directors. BD_Q: the percentage of directors who occupy more than three positions in other companies. FINOWN: the ratio of financial institutions shares to total outstanding shares. BANK_D: the ratio of the number of bank representatives on the board to the total number of directors. CROSS: the ratio of institutional shares to total outstanding shares. BLOCK: the percentage of blockholder ownership. GOV_APP: the ratio of the number of political-related directors to the total number of directors. GOVOWN: the ratio of government shares to total outstanding shares. GOV_I: the number of government investors. GAKUBATSU: the ratio of the number of graduates from the elite universities (Tokyo, Kyoto, Waseda Hitotsubashi, and Keio) to the total number of directors in the board. FOROWN: the ratio of foreign shares to total outstanding shares. FSTS: the ratio of foreign sales to total sales. FATA: the ratio of foreign assets to total assets. FSE: the number of listings on foreign exchanges.

	2001-2003 data		Normalised data	
Description of path	**path coefficient**	**t value**	**path coefficient**	**t value**
BDOWN <-- BOARD	0.44		0.26	
OUTSIDE <-- BOARD	0.42	3.38***	0.68	3.08***
BD_Q <-- BOARD	-0.01	-0.10	-0.04	-0.85
FINOWM <-- INST	0.96		0.7	
BANK_D <-- INST	-0.09	-1.68*	-0.08	-2.11**
CROSS <-- INST	-0.47	-5.87***	-0.72	-13.65***
BLOCK <-- INST	-0.33	-4.97***	-0.54	-12.67***
GOV_APP <-- GOV	0.62		0.65	
GOVOWN <-- GOV	0.56	5.76***	0.67	10.01***
GOV_I <-- GOV	0.23	3.29***	0.15	3.76***
GAKUBATSU <-- GOV	0.25	3.62***	0.34	7.82***
FOROWN <-- DOI	0.45		0.41	
FSTS <-- DOI	0.97	8.46***	1.00	11.65***
FATA <-- DOI	0.76	9.08***	0.72	13.12***
FSE <-- DOI	0.33	5.61***	0.30	8.19***
Direct Effect				
INST --> BOARD	-0.55	-3.35***	-0.34	-3.00***
GOV --> BOARD	-0.09	-0.65	0.20	2.35**
INST --> DOI	-0.07	-0.66	0.02	0.49
GOV --> DOI	-0.31	-3.16***	-0.25	-4.62***
BOARD --> DOI	0.11	0.84	0.11	1.75*
Indirect Effect				
INST --> BOARD --> DOI	-0.06	-0.85	-0.04	-1.53
GOV --> BOARD --> DOI	-0.01	-0.57	0.02	1.36
Total Effect				
INST --> DOI	-0.13	-1.74*	-0.02	-0.28
GOV --> DOI	-0.32	-3.26***	-0.23	-4.51***
Observations	406		1000	
GFI	0.88		0.86	
AGFI	0.82		0.79	
SRMR	0.09		0.08	
RMSEA	0.10		0.12	

* p<0.1; ** p<0.05; *** p<0.01

Table 7-6 Path Coefficients: Governance (t) and DOI (t+1), Japan, without GAKUBATSU

Please refer to Table 7-5 for the explanations of variables.

	2001-2003 data		Normalised data	
Description of path	**path coefficient**	**t value**	**path coefficient**	**t value**
BDOWN <-- BOARD	0.25		0.19	
OUTSIDE <-- BOARD	0.75	1.24	0.92	1.63
BD_Q <-- BOARD	-0.07	-1.06	-0.05	-1.44
FINOWM <-- INST	0.61		0.64	
BANK_D <-- INST	-0.09	-1.54	-0.09	-2.32**
CROSS <-- INST	-0.74	-7.83***	-0.79	-13.41***
BLOCK <-- INST	-0.58	-7.96***	-0.54	-13.03***
GOV_I <-- GOV	0.19		0.15	
GOVOWN <-- GOV	0.44	2.85***	0.54	4.04***
GOV_APP <-- GOV	0.85	2.14**	0.84	3.70***
FOROWN <-- DOI	0.46		0.42	
FSTS <-- DOI	0.96	8.61***	0.98	11.97***
FATA <-- DOI	0.77	9.16***	0.73	13.28***
FSE <-- DOI	0.33	5.61***	0.30	8.17***
Direct Effect				
INST --> BOARD	-0.25	-1.20	-0.25	-1.58
GOV --> BOARD	0.03	0.30	0.09	1.26
INST --> DOI	0.17	1.64	0.07	1.58
GOV --> DOI	-0.24	-2.31**	-0.20	-3.11***
BOARD --> DOI	0.13	1.63	0.07	1.87*
Indirect Effect				
INST --> BOARD --> DOI	-0.03	-0.99	-0.02	-1.21
GOV --> BOARD --> DOI	0.004	0.29	0.01	1.03
Total Effect				
INST --> DOI	0.14	1.43	0.05	1.25
GOV --> DOI	-0.24	-2.30**	-0.19	-3.08***
Observations	406		1000	
GFI	0.88		0.86	
AGFI	0.82		0.8	
SRMR	0.08		0.08	
RMSEA	0.10		0.12	

* p<0.1; ** p<0.05; *** p<0.01

7.3 Taiwan

7.3.1 Taiwan: Is the degree of internationalisation related to the subsequent intervention of governments and financial institutions?

In addition to the Japanese sample, we also examine the relationship between DOI and the intervention of governments and financial institutions through the board of directors in Taiwan. Since some Taiwanese companies do not have data available for the measurement variables of DOI, we drop three Taiwanese companies in the empirical analysis[129]. The number of total observations in this topic is 197. Table 7-7 provides the descriptive statistics of all measurement variables. Compared to the descriptive statistics of the Japanese model in Table 7-1, we find that the ratio of foreign sales to total sales (FSTS) is 47.80% in Taiwan, which is larger than 18.64% in Japan[130], but foreign ownership (FOROWN) and the number of listings on foreign exchanges (FSE) in Taiwan are smaller than in Japan. Therefore, given the diverse conditions in Japan and Taiwan, it is important to consider the real side and the financial side (Hassel, 2003) to obtain a complete picture of DOI[131].

[129] The three companies deleted in this section are Evergreen Marine Corporation (Taiwan) Ltd. (SIC code: 2603), Wan Hai Lines Ltd. (SIC code: 2615), and China Airline (SIC code: 2610). All three companies belong to the international transportation industry. These three companies do not have data for foreign sales and foreign assets.

[130] We choose 200 Taiwanese companies according to capitalisation. Among the 200 big companies, many companies are categorised as the electronics industry. In Taiwan, electronic products are the main export commodities. Therefore, most companies in our sample have very high ratios of foreign sales to total sales.

[131] For the discussion concerning the real dimension and the financial dimension of DOI, please refer to Section 3.4.

Table 7-7 Summary Statistics, Taiwan, 2001-2003, 591 Observations_DOI

BDOWN: the percentage of board ownership. OUTSIDE: the percentage of outside directors. MANOWN: the percentage of managerial ownership. BD_Q: the percentage of directors who occupy more than three positions in other companies. FINOWN: the ratio of financial institutions shares to total outstanding shares. BANK_D: the ratio of the number of bank representatives on the board to the total number of directors. CROSS: the ratio of institutional shares to total outstanding shares. BLOCK: the percentage of blockholder ownership. GOV_OWN: the ratio of government shares to total outstanding shares. GOV_I: the number of government agencies. GOV_APP: the ratio of the number of political-related directors to the total number of directors. FOROWN: the ratio of foreign shares to total outstanding shares. FSTS: the ratio of foreign sales to total sales. FATA: the ratio of foreign assets to total assets. FSE: the number of listings on foreign exchanges.

Latent variable	Measurement Variable	Observations	Mean	St. Dev.	Max	Min
BOARD	BDOWN (%)	591	10.31	11.71	70.61	0.00
	OUTSIDE (%)	591	44.17	23.43	100.00	0.00
	MANOWN (%)	591	2.89	6.03	53.58	0.00
	BD_Q (%)	591	28.37	24.49	100.00	0.00
INST	FINOWN (%)	591	3.39	6.12	55.88	0.00
	BANK_D (%)	591	5.55	11.50	75.00	0.00
	CROSS (%)	591	24.13	18.96	79.92	0.01
	BLOCK (%)	591	37.20	16.26	95.32	5.03
GOV	GOVOWN (%)	591	3.77	10.31	97.13	0.00
	GOV_I	591	3.50	5.05	38.00	0.00
	GOV_APP (%)	591	7.05	18.11	100.00	0.00
DOI	FOROWN (%)	591	9.76	12.19	85.39	0.00
	FSTS (%)	591	47.80	37.34	99.99 *	0.00
	FATA (%)	591	12.73	21.15	108.44 **	0.00
	FSE	591	0.22	0.51	4.00	0.00

* Quanta Computer Inc. (SIC code: 2382) is the biggest laptop components producer in Taiwan and supply components to many foreign laptop producers.

** The major production line of Chicony Electronics Corporation Ltd. (SIC code: 2385) is in China and Southeast Asia.

Since SEM requires measurement variables to follow a normal distribution, we use the averaging method, which is mentioned in Section 5.4.5, to normalise these measurement variables. Table 7-8 presents the result of the Kolmogorov-Smirnov test. Before using the normalising procedure, almost all variables are not normally distributed. After using the averaging method, the non-normality problem is improved significantly.

Table 7-8 Kolmogorov-Smirnov Test for Taiwanese Data_DOI

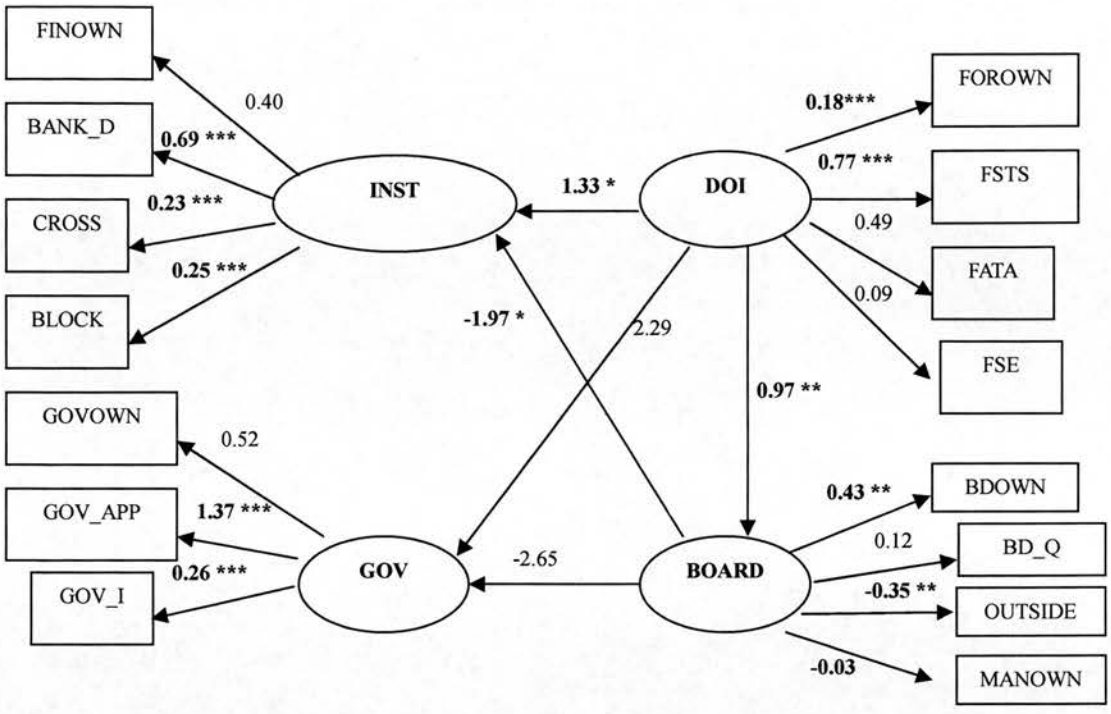
Please refer to Table 7-7 for the explanations of variables.

	Orgianal Data (N=394)		Normalised Data (N=1000)	
Variables	Kolmogorov-Smirnov Z	Significance (2-tailed)	Kolmogorov-Smirnov Z	Significance (2-tailed)
BDOWN	3.747	0.000	0.820	0.512
OUTSIDE	1.090	0.186	0.654	0.786
MANOWN	6.198	0.000	0.981	0.291
BD_Q	2.279	0.000	0.835	0.489
FINOWN	5.582	0.000	1.646	0.009
BANK_D	7.428	0.000	1.199	0.113
CROSS	2.429	0.000	0.863	0.445
BLOCK	1.268	0.080	0.551	0.921
GOVOWN	7.038	0.000	1.253	0.086
GOV_I	4.428	0.000	0.892	0.404
GOV_APP	8.864	0.000	0.764	0.604
FOROWN	4.196	0.000	1.037	0.233
FSTS	2.779	0.000	0.582	0.887
FATA	6.344	0.000	0.856	0.456
FSE	9.538	0.000	1.930	0.001

Table 7-9 and Path Diagram 7-3 include the completely standardised coefficients for the hypothesised relationships and the model statistics. Table A4-5 in Appendix 4 includes structural parameters. Compared to the Taiwanese models regarding performance in Section 6.3.1 and 6.3.2 and the Japanese models in Section 6.2.1 and 6.2.2, the main goodness-of-fit indices presented in Table 7-9 are not so high but still acceptable: GFI equals 0.87, AGFI equals 0.81. In the alternative index, RMSEA equals 0.11. In the residual analysis, SRMR equals 0.10. From Path Diagram 7-3 and Table 7-9, by using original data we can observe that the direct relationship between DOI and BOARD is positive and significant at the 5% level (0.97, t = 2.00). Similar to the Japanese Model in Table 7-3 and Table 7-4, this finding is consistent with Hypothesis 10[132]. This finding is also consistent with Sanders and Carpenter (1998) who conclude that companies will adapt their governance mechanisms to address the information processing needs that arise from a higher DOI (Chandler, 1962; Burgelman, 1991; Sanders and Carpenter, 1998). In other words, in order to manage the increased complexity that results from a higher DOI, the monitoring ability of a board will be improved.

[132] Hypothesis 10: The degree of internationalisation (t) is positively associated with the monitoring ability of a board (t+1).

Path Diagram 7-3: DOI (t) and Governance (t+1), Taiwan



* p<0.1; ** p<0.05; *** p<0.01

Although the general conclusion regarding the relationship between DOI and the monitoring ability of a board (BOARD) is similar to the conclusion in Sanders and Carpenter (1998) for the US, the sign of the coefficient in the Taiwanese model is different from those in the Japanese model and in Sanders and Carpenter (1998). Sanders and Carpenter (1998) find that DOI is positively related to the ratio of outside directors and board size. They state that one percentage point increase in DOI will result in 5% increase in board size and 15% increase in the ratio of outside directors[133]. In Japan, the path coefficient between DOI and the ratio of outside directors (OUTSIDE) is 0.12[134] compared with -0.34[135] in the Taiwanese model. That is, a higher DOI will result in fewer outside directors on the board in Taiwan, whereas it will result in more outside directors on the board in Japan and the US

[133] After including two interaction variables (DOI* board size and DOI* CEO long-tem pay mix), the coefficient of DOI is positive and significant, otherwise, the coefficient of DOI is not significant.

[134] In Japan (Table 7-3), the path coefficient of the relationship between the measurement variable OUTSIDE and the latent variable BOARD is 0.45. Therefore, the path coefficient between DOI and the ratio of outside directors (OUTSIDE) is (0.45)*(0.26), which equals 0.12.

[135] In Taiwan, the path coefficient of the relationship between the measurement variable OUTSIDE and the latent variable BOARD is -0.37. Therefore, the path coefficient between DOI and the ratio of outside directors (OUTSIDE) is (0.97)*(-0.35), which equals -0.34.

(Sanders and Carpenter, 1998).

Table 7-9 also presents a direct significant and positive relationship between DOI and INST (1.33, t = 1.70), which means that a higher DOI will attract more intervention from financial institutions. However, the indirect path between DOI and INST through the intermediate BOARD is significant and negative (-1.91, t = -2.32), which implies that in Taiwan, a board with better monitoring ability and independence will fend off intervention from other financial institutions. Owing to the negative indirect path, the total effect from DOI on INST is negative and significant at the 1% level (-0.58, t = -4. 60) in Taiwan, so the final results in the Japanese and the Taiwanese model are different. This finding is not consistent with Hypothesis 9 and the findings of Tihanyi et al. (2003) who conclude that financial institutions are more willing to invest in companies with higher DOI.

By using the original data in Table 7-9, the direct relationship between GOV and DOI is not significant (2.29, t = 0.87), which means that Hypotheses 8-1[136] and Hypothesis 8-2 [137] are not supported. However, after including the path DOI→BOARD→GOV, the total effect from DOI on GOV is negative (-0.28) and significant at the 1% level. The negative total effect in Taiwan is consistent with Hypothesis 8-1, which states that companies with a higher DOI will fend off intervention of governments.

The normalised data in Table 7-9 present similar empirical results. By using normalised data, the total effects from DOI to GOV/INST are both negative and significant, which means that Hypothesis 8-1 is supported and Hypothesis 9 is rejected. Moreover, due to the positive and significant relationship between BOARD and DOI, Hypothesis 10 is also supported. In addition, since the Japanese models exclude the variable MANOWN, we rerun the Taiwanese model without the variable and report the results in Table 7-10. Structural parameters are presented in Table

[136] Hypothesis 8-1: The degree of internationalisation (t) is negatively associated with the subsequent intervention of governments (t+1).
[137] Hypothesis 8-2: The degree of internationalisation (t) is positively related to the subsequent intervention of governments (t+1).

A4-6 in Appendix 4. The results in Table 7-10 are similar to those in Table 7-9.

In brief, unlike the Japanese model, which presents a significant and positive total effect from DOI to INST in Table 7-3, the total effect from DOI to INST is negative and significant in Tables 7-9 and 7-10. However, the total effects from DOI and GOV are both negative and positive in Japan and Taiwan, which means that a higher DOI will be accompanied with lower intervention of government. Based on the discussion in Section 3.2.2 and Section 4.3.1, different stages of internationalisation will have different influences on political involvement (Aggarwal and Agmon, 1990; Sim and Pandian, 2003). According to Aggarwal and Agmon (1990) and the eclectic paradigm (Dunning, 1981, 1986)[138], the government acts as a supplier of information and technology in the early stages of the internationalisation process (Mahmood and Rufin, 2005) but acts as a 'reluctant partner' in the late stages of the internationalisation process and 'try to slow down this phase in the process of internationalisation' (Aggarwal and Agmon, 1990, p.175). The negative relationship between DOI and GOV in Japan and Taiwan provide the evidence that the stage of internationalisation in Japan and Taiwan are in the late stages.

Based on the empirical results, the board of directors in Taiwan plays a critical intermediate role in the relationship between DOI and INST, which means that the board of directors in Taiwan may have the power to fend off intervention from financial institutions. However, according to the insignificant relationship between GOV and BOARD, such an intermediate role is not held by the board between the Taiwanese government and internationalisation of Taiwanese companies. Therefore, Hypothesis 14 is only supported in the relationship between DOI and INST. Section 7.4 will discuss more deeply the difference between the Japanese and Taiwanese models.

[138] For the introduction concerning the eclectic paradigm (Dunning, 1981, 1986), please refer to Section 3.2.1.

Table 7-9 Path Coefficients: DOI (t) and Governance (t+1), Taiwan

BD_Q: the percentage of directors who occupy more than three positions in other companies. BDOWN: the percentage of board ownership. OUTSIDE: the percentage of outside directors. MANOWN: the percentage of managerial ownership. FINOWN: the ratio of financial institutions shares to total outstanding shares. BANK_D: the ratio of the number of bank representatives on the board to the total number of directors. CROSS: the ratio of institutional shares to total outstanding shares. BLOCK: the percentage of blockholder ownership. GOVOWN: the ratio of government shares to total outstanding shares. GOV_APP: the ratio of the number of political-related directors to the total number of directors. GOV_I: the number of government investors. FATA: the ratio of foreign assets to total assets. FOROWN: the ratio of foreign shares to total outstanding shares. FSTS: the ratio of foreign sales to total sales. FSE: the number of listings on foreign exchanges.

	2001-2003 data		Normalised data	
Description of path	**path coefficient**	**t value**	**path coefficient**	**t value**
BDOWN <-- BOARD	0.44		0.40	
OUTSIDE <-- BOARD	-0.38	-5.43***	-0.37	-8.20***
MANOWN <-- BOARD	0.30	6.62***	0.11	8.72***
BD_Q <-- BOARD	0.10	1.66*	0.26	2.92***
FINOWN <-- INST	0.38		0.40	
BANK_D <-- INST	0.73	6.12***	0.72	10.11***
CROSS <-- INST	0.24	3.11***	0.29	5.56***
BLOCK <-- INST	0.26	3.85***	0.29	6.60***
GOVOWN <-- GOV	0.50		0.44	
GOV_I <-- GOV	0.40	2.56**	1.62	3.22***
GOV_APP <-- GOV	1.47	4.61***	0.40	5.17***
FATA <-- DOI	0.50		0.50	
FOROWN <-- DOI	0.21	3.27***	0.23	5.64***
FSTS <-- DOI	0.74	6.55***	0.75	10.57***
FSE <-- DOI	0.09	1.28	0.04	1.11
Direct Effect				
BOARD --> INST	-2.00	-2.51**	-1.97	-3.58***
BOARD --> GOV	-2.39	-0.98	-2.17	-1.31
DOI --> INST	1.36	1.66*	1.33	2.34**
DOI --> GOV	2.06	0.84	1.89	0.32
DOI --> BOARD	0.97	5.72***	0.97	8.76***
Indirect Effect				
DOI-->BOARD-->INST	-1.94	-2.24**	-1.97	-3.25***
DOI-->BOARD-->GOV	-2.32	-0.94	-2.10	-1.26
Total Effect				
DOI --> INST	-0.58	-4.44***	-0.64	-7.39***
DOI --> GOV	-0.26	-3.14***	-0.21	-3.96***
Observations	394		1000	
GFI	0.87		0.86	
AGFI	0.81		0.79	
SRMR	0.10		0.10	
RMSEA	0.11		0.12	

* p<0.1; ** p<0.05; *** p<0.01

Table 7-10 Path Coefficients: DOI (t) and Governance (t+1), Taiwan, without MANOWN

Please refer to Table 7-9 for the explanations of variables.

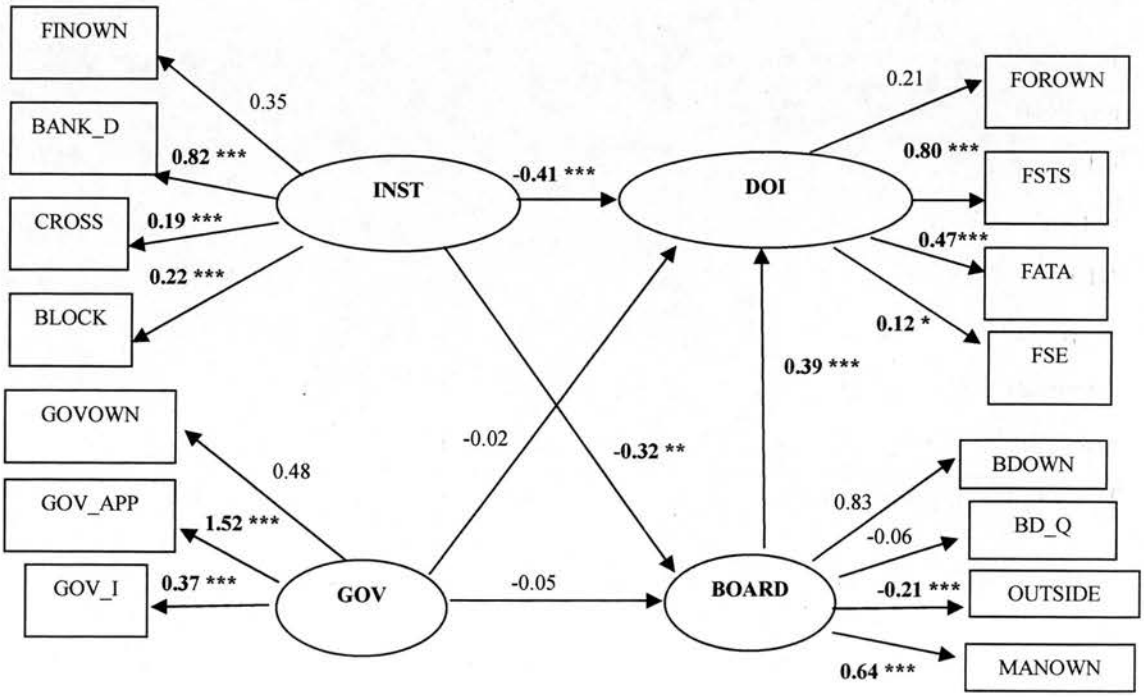
	2001-2003 data		Normalised data	
Description of path	**path coefficient**	**t value**	**path coefficient**	**t value**
BD_Q <-- BOARD	0.13		0.07	
OUTSIDE <-- BOARD	-0.37	-2.22**	-0.33	-1.85*
BDOWN <-- BOARD	0.39	2.23**	0.45	1.86*
FINOWM <-- INST	0.37		0.42	
BANK_D <-- INST	0.72	6.03***	0.72	10.80***
CROSS <-- INST	0.26	3.22***	0.28	5.62***
BLOCK <-- INST	0.27	3.88***	0.23	5.78***
GOVOWN <-- GOV	0.49		0.53	
GOV_APP <-- GOV	1.48	4.39***	1.44	7.73***
GOV_I <-- GOV	0.19	6.35***	0.46	4.34***
FATA <-- DOI	0.49		0.48	
FOROWN <-- DOI	0.33	3.41***	0.29	5.76***
FSTS <-- DOI	0.77	6.05***	0.79	10.12***
FSE <-- DOI	0.16	1.82*	0.04	1.03
Direct Effect				
BOARD --> INST	-1.75	-1.82*	-1.51	-1.75*
BOARD --> GOV	-1.74	-1.12	-1.02	-1.59
DOI --> INST	1.09	1.70*	0.75	2.31**
DOI --> GOV	1.41	1.04	0.66	2.05**
DOI --> BOARD	0.95	2.23**	0.92	1.86*
Indirect Effect				
DOI-->BOARD-->INST	-1.66	-2.42**	-1.39	-3.99***
DOI-->BOARD-->GOV	-1.65	-1.20	-0.94	-2.72***
Total Effect				
DOI --> INST	-0.57	-4.46***	-0.64	-8.11***
DOI --> GOV	-0.24	-3.05***	-0.28	-5.26***
Observations	394		1000	
GFI	0.87		0.86	
AGFI	0.78		0.79	
SRMR	0.10		0.1	
RMSEA	0.12		0.12	

* p<0.1; ** p<0.05; *** p<0.01

7.3.2 Taiwan: Is the subsequent degree of internationalisation positively related to such intervention?

In addition to the discussion about whether DOI is related to the intervention of government (GOV) and financial institutions (INST), we also examine whether the intervention of government (GOV) and financial institutions (INST) is associated with the subsequent DOI. Based on the hypotheses discussed in Section 4.3.2, we can draw Path Diagram 7-4. Table 7-11 reports the completely standardised coefficients by using original and normalised data. Structural parameters, which are estimated by SEM, are shown in Table A4-7 in Appendix 4. The goodness-of-fit indices in this model are not so high but acceptable: GFI is equal to 0.86, AGFI equals 0.79, SRMR equals 0.10, and RMSEA equals 0.11. This indicates that the data are not adequately explained by the model in Path Diagram 7-4. The DOI in Taiwan may be influenced by other determinants which are difficult to measure, such as the information-processing ability of executives and the long-term strategies of companies.

Path Diagram 7-4: Governance (t) and DOI (t+1), Taiwan



* p<0.1; ** p<0.05; *** p<0.01

In Table 7-11, it can be seen that both the direct relationships between INST and DOI are significant using original data and normalised data. After including the indirect effect from INST to DOI via BOARD, the total effect from INST on DOI is significant and negative using original data (-0.53, t = -2.82) and normalised data (-0.62, t = -4.79). This result is not consistent with Hypothesis 12, which states that the relationship between the intervention of financial institutions and the subsequent DOI is positive. Moreover, the negative and significant relationship between INST and BOARD (-0.32, t = -3.53) indicates that the intervention of financial institutions will jeopardise the monitoring ability of the board. The total effect from GOV on DOI is not significant in Table 7-11. Both Hypothesis 11-1 and Hypothesis 11-2 are not supported. Although political involvement does exist in Taiwan and has significant relationship with firm performance, the government does not have significant influence on the subsequent DOI.

Sanders and Carpenter (1998) infer that the monitoring ability of a board may significantly influence the company's DOI. By using original data, the direct relationship between BOARD and DOI presented in Table 7-11 is positive and significant, which suggests that the argument that the monitoring ability of a board have positive influence on the subsequent DOI. Hypothesis 13, which claims that the relationship between the monitoring ability of a board (t) and DOI (t+1) is positive, is supported by original data. Given the indirect significant relationship, INST→BOARD→DOI, we can conclude that the board of directors may play an intermediate role between companies and financial institutions. Therefore, Hypothesis 14 is supported in the relationship between INST and DOI. However, the intermediate role of a board is not held between GOV and DOI.

Table 7-12 presents the results excluding the variable MANOWN. Structural parameters are shown in Table A4-8. By using the original non-normalised data, the total effect from INST on DOI is -0.55, which is significant at the 1% level. This finding rejects Hypothesis 12, which claims that the relationship between the intervention of financial institutions and the subsequent DOI is positive. Similarly,

the total effect from GOV on DOI is not significant in Table 7-12, which means that Hypothesis 11-1 and 11-2 are not supported. Hypothesis 13 and Hypothesis 14 are not supported by the results using the original non-normalised data in Table 7-12. Section 7.4 will expand the discussion on the similarities and differences between the Japanese and the Taiwanese models.

Table 7-11 Path Coefficients: Governance (t) and DOI (t+1), Taiwan

BDOWN: the percentage of board ownership. OUTSIDE: the percentage of outside directors. MANOWN: the percentage of managerial ownership. BD_Q: the percentage of directors who occupy more than three positions in other companies. FINOWN: the ratio of financial institutions shares to total outstanding shares. BANK_D: the ratio of the number of bank representatives on the board to the total number of directors. CROSS: the ratio of institutional shares to total outstanding shares. BLOCK: the percentage of blockholder ownership. GOVOWN: the ratio of government shares to total outstanding shares. GOV_I: the number of government investors. GOV_APP: the ratio of the number of political-related directors to the total number of directors. FOROWN: the ratio of foreign shares to total outstanding shares. FSTS: the ratio of foreign sales to total sales. FATA: the ratio of foreign assets to total assets. FSE: the number of listings on foreign exchanges.

	2001-2003 data		Normalised data	
Description of path	**path coefficient**	**t value**	**path coefficient**	**t value**
BDOWN <-- BOARD	0.83		0.83	
OUTSIDE <-- BOARD	-0.21	-3.41***	-0.21	-5.43***
MANOWN <-- BOARD	0.64	7.17***	0.63	10.98***
BD_Q <-- BOARD	-0.06	-0.90	-0.01	0.02
FINOWM <-- INST	0.35		0.34	
BANK_D <-- INST	0.82	5.64***	0.75	9.22***
CROSS <-- INST	0.19	3.06***	0.15	3.83***
BLOCK <-- INST	0.22	3.24***	0.28	5.94***
GOVOWN <-- GOV	0.48		0.42	
GOV_I <-- GOV	0.37	2.74***	0.55	4.51***
GOV_APP <-- GOV	1.52	4.17***	1.39	6.17***
FOROWN <-- DOI	0.21		0.25	
FSTS <-- DOI	0.80	3.39***	0.78	6.14***
FATA <-- DOI	0.47	3.36***	0.42	5.92***
FSE <-- DOI	0.12	1.75*	0.11	2.70***
Direct Effect				
INST --> BOARD	-0.32	-3.53***	-0.29	-4.64***
GOV --> BOARD	-0.05	-1.38	-0.04	-1.47
INST --> DOI	-0.41	-2.64***	-0.51	-4.55***
GOV --> DOI	-0.02	-0.43	0.05	1.59
BOARD --> DOI	0.39	2.83***	0.38	4.83***
Indirect Effect				
INST --> BOARD --> DOI	-0.12	-2.34**	-0.11	-3.68***
GOV --> BOARD --> DOI	-0.02	-1.20	-0.02	-1.36
Total Effect				
INST --> DOI	-0.53	-2.82***	-0.62	-4.79***
GOV --> DOI	-0.04	-0.82	0.03	1.04
Observations	394		1000	
GFI	0.86		0.86	
AGFI	0.79		0.79	
SRMR	0.10		0.11	
RMSEA	0.11		0.12	

* p<0.1; ** p<0.05; *** p<0.01

Table 7-12 Path Coefficients: Governance (t) and DOI (t+1), Taiwan, without MANOWN

Please refer to Table 7-11 for the explanations of variables.

	2001-2003 data		Normalised data	
Description of path	**path coefficient**	**t value**	**path coefficient**	**t value**
BDOWN <-- BOARD	0.40		0.41	
OUTSIDE <-- BOARD	-0.37	-5.43***	-1.41	-8.78***
BD_Q <-- BOARD	0.04	0.75	0.01	0.34
FINOWM <-- INST	0.35		0.33	
BANK_D <-- INST	0.82	5.64***	0.73	8.31***
CROSS <-- INST	0.19	3.00***	0.28	5.07***
BLOCK <-- INST	0.23	3.34***	0.26	5.63***
GOVOWN <-- GOV	0.51		0.61	
GOV_I <-- GOV	0.27	2.37**	0.12	2.47**
GOV_APP <-- GOV	1.43	5.03***	1.21	5.01***
FOROWN <-- DOI	0.25		0.23	
FSTS <-- DOI	0.77	3.87***	0.80	5.83***
FATA <-- DOI	0.47	3.77***	0.46	5.75***
FSE <-- DOI	0.13	1.97**	0.11	2.94***
Direct Effect				
INST --> BOARD	-0.63	-3.65***	-0.68	-5.46***
GOV --> BOARD	-0.17	-2.33**	-0.21	-3.32***
INST --> DOI	0.24	0.45	0.11	0.29
GOV --> DOI	0.18	1.20	0.18	1.50
BOARD --> DOI	1.25	1.49	1.04	1.91*
Indirect Effect				
INST --> BOARD --> DOI	-0.79	-1.36	-0.71	-1.77*
GOV --> BOARD --> DOI	-0.21	-1.37	-0.22	-1.78*
Total Effect				
INST --> DOI	-0.55	-3.05***	-0.60	-4.50***
GOV --> DOI	-0.03	-0.80	-0.04	-1.01
Observations	394		1000	
GFI	0.86		0.86	
AGFI	0.78		0.79	
SRMR	0.10		0.09	
RMSEA	0.12		0.12	

* p<0.1; ** p<0.05; *** p<0.01

7.4 Comparison and Discussion

In addition to firm performance, this thesis also uses DOI to determine whether there is relationship between the intervention of governments and financial institutions and the strategy of a company (i.e. international expansion, which is measured by DOI in this thesis). We first investigate whether DOI is positively/negatively associated with the subsequent intervention of governments and financial institutions through the board of directors. From Table 7-3 and Table 7-9, we can observe a significant and positive relationship between DOI and the subsequent monitoring ability of a board (BOARD) both in Japan and Taiwan, which implies that a higher DOI requires a board with better monitoring ability to manage the complexity that results from international expansion. These results are consistent with the study by Sanders and Carpenter (1998) who conclude that DOI is positively associated with the subsequent monitoring ability of a board due to the complexity resulting from international expansion.

Additionally, there is a direct positive relationship between DOI and the subsequent intervention of financial institutions (INST) in Japan (Table7-3) and Taiwan (Table 7-9). This result supports the argument that institutional investors, such as banks, insurance companies, and blockholders, are likely to be interested in investing in companies with a higher DOI because of the positive effects on shareholder wealth (Tihanyi et al., 2003). However, the indirect effects from DOI to INST via BOARD differ between Japan and Taiwan. In Taiwan, based on the negative relationship between BOARD and INST, we conclude that the board of directors will fend off intervention from financial institutions. Conversely, as seen in Table 7-3, the board of directors (BOARD) in Japan is positively related to intervention from the financial institutions (INST), which means that Japanese boards welcome more involvement from financial institutions. Because of the different attitudes of the boards, the total effect from DOI to INST via BOARD is negative in Taiwan but positive in Japan. According to Tihanyi et al. (2003), different interests of institutional investors will affect their influences on firm strategies. The ownership of pressure-resistant

institutional investors[139], such as professional investment funds and pension funds, are positively related to DOI (Del Guercio and Tkac, 2000; Tihanyi et al., 2003). Hence, according to prior results and the findings in this thesis, we support the argument that most institutional investors in Japan are pressure-resistant. The present findings highlight the need for further research on the components of financial institutional investors in Japan and Taiwan.

The total effects from DOI on subsequent political involvement (GOV) are negative and significant in Japan and Taiwan. In Japan, the direct relationship between DOI and GOV is significant and negative (Table 7-3 and Table 7-4), which is consistent with Hypothesis 8-1, which states that companies with a higher DOI will reduce the intervention of the government. Combining the indirect path from DOI to GOV via BOARD, the total effect from DOI on GOV is still negative and significant in Japan. In Table 7-9 we can see that in Taiwan, the direct relationship between DOI and GOV is insignificant. However, the total effect from DOI on GOV is negative and significant, which results in the acceptance of Hypothesis 8-1.

According to the contextual research in the study by Aggarwal and Agmon (1990), varied stages of internationalisation will have different influences on political involvement. They argue that the role of government is important in directing initial international trade, but it will change as the country develops. That is, political involvement and the role of a government will change with internationalisation and the development process (Aggarwal and Agmon, 1990; Sim and Pandian, 2003). Therefore, when the country is in the early stages of internationalisation, companies will require more support from the government. As the country develops and has a higher DOI, the influence and intervention of government will gradually diminish. Since the government is commonly regarded as a major source of inefficiency in prior research, companies with a higher DOI may reduce political involvement. The results in the Japanese and Taiwanese models support the supposition that both

[139] Brickley and colleagues (1988) classified institutional investors into "pressure-resistant", "pressure-sensitive," and "pressure-indeterminate" institutions. Pressure-resistant institutions include pension funds, mutual funds, endowments, and foundations. Pressure-sensitive institutions include insurance companies and banks.

countries are at a later stage of internationalisation.

This thesis also investigates whether the intervention of government and financial institutions affects the subsequent DOI. The total effect from the intervention of financial institutions (INST) on the subsequent DOI is negative and significant in Japan (Table 7-5) by using original non-normalised data, which means that the intervention of financial institutions in Japan cannot promote the subsequent DOI. Hypothesis 12 is rejected. Similar to the Japanese model, the intervention of financial institutions in Taiwan has a negative total effect on the subsequent DOI because it will jeopardise the monitoring ability of the board and thereby reduce the subsequent DOI. This argument is supported by the significant and negative indirect path from INST on DOI via BOARD, as seen in Table 7-10.

Moreover, the relationship between political involvement (GOV) and the subsequent DOI in Japan is also negative and significant. As can be seen in Table 7-5 and Table 7-6, the direct path from GOV on the subsequent DOI is significant and negative. Consequently, the total effect from GOV on the subsequent DOI is also significant and negative. This result indicates that the intervention of the government, such as government appointed directors and government ownership, is negatively related to the subsequent DOI. However, in Taiwan both the direct and indirect effects from GOV on the subsequent DOI are insignificant (Table 7-11). Unlike the analysis concerning firm performance in Table 6-11, the government in Taiwan does not have a significant influence on the subsequent DOI. In brief, the intervention of government in Taiwan plays an important role on affecting subsequent firm performance rather than the subsequent DOI.

Additionally, in Section 7.2.2 and Section 7.3.2, we also examine whether the monitoring ability of a board is associated with the subsequent DOI. From Table 7-11, we observe a positive relationship between BOARD and the subsequent DOI by using original data in Taiwan. This finding supports Hypothesis 13, which argues that a board with better monitoring ability can manage the complexity of international markets and thereby enhance DOI. However, such positive relationship is not

observed in the Japanese model (Table 7-5). Based the findings in Section 6.2.2 and Section 7.2.2, we can conclude that Japanese boards are not significantly related to subsequent firm performance and DOI. This finding adds value to scholars' knowledge and demonstrates the need of improving the insignificant role of Japanese boards. Table 7-13 summarises the hypotheses and findings.

Table 7-13 The summary of hypotheses and findings_DOI

Hypothesis	Argument	Japan	Taiwan
Hypothesis 8-1	The degree of internationalisation (t) is negatively associated with the subsequent intervention from	Accept	Accept
Hypothesis 8-2	The degree of internationalisation (t) is positively related to the subsequent intervention from	Reject	Reject
Hypothesis 9	The degree of internationalisation (t) is positively associated with the subsequent intervention of	Accept	Reject
Hypothesis 10	The degree of internationalisation (t) is positively associated with the subsequent monitoring ability of a	Accept	Accept
Hypothesis 11-1	The intervention from governments (t) is positively related to a higher subsequent degree of	Reject	Not significant
Hypothesis 11-2	The intervention from governments (t) will result in a lower subsequent degree of internationalisation (t+1).	Accept	Not significant
Hypothesis 12	The intervention of financial institutions (t) will result in a higher subsequent degree of internationalisation	Reject	Reject
Hypothesis 13	The relationship between the monitoring ability of a board (t) and the subsequent degree of internationalisation (t+1) is positive.	Not significant	Accept
Hypothesis 14	The board of directors can moderate the relationship between the degree of internationalisation (DOI) and the intervention of government and financial	Not significant	Accept *

* Hypothesis 14 is only supported in the relationship between DOI and the intervention of financial institutions.

To sum up, although the incentives of intervention may be different, the intervention of government and financial institutions is not accompanied by better firm performance and a higher DOI in Japan and Taiwan. We can conclude that having intervention of government and financial institutions is harmful to firm performance and DOI. In the beginning, receiving representatives from government and financial institutions can solve financial crises, however, the intervention will finally be negatively related to subsequent firm performance and DOI Given the findings in this thesis, government and financial institutions should not intervene in the operation of a companies and companies should refuse the intervention of government and financial institutions.

Chapter 6 and Chapter 7 use SEM to examine the relationships among several latent variables. The primary focus of these two chapters is examining whether political involvement and the intervention of financial institutions are related to performance and DOI. We use firm performance and DOI as dependent variables. Unlike OLS, structural equation modelling can observe direct and indirect relationships. Therefore, regarding firm performance, we can observe that the board of directors plays an intermediate role in Taiwan but not in Japan. Based on previous discussions, we find that the relationship between political involvement and subsequent firm performance and subsequent, which supports the argument that government is not efficient (Shleifer, 1998). This inefficiency may influence not only performance and internationalisation, but also the alignment between the interests of executives and the interests of shareholders.

Based on the results in Chapter 6 and Chapter 7 and the work of Shleifer and Vishny (1998), the following chapters examine whether government-linked companies (GLCs) are less efficient in aligning the interests of executives and the interests of shareholders, such as having fewer incentive payments and a less sensitive pay-performance relationship. In this thesis we focus on the top executives' incentive payments in Taiwan. Chapter 8 introduces the background of top executives' compensation and remuneration committees in Taiwan. Chapter 9 develops hypotheses concerning the relationship between the level of incentive payments and performance/governance. Chapter 10 presents the empirical results for this topic.

Chapter Eight
Top executives' Compensation in Taiwan

8.1 Introduction

Academic research on the topic of CEO compensation has a long history. It has been the subject of extensive studies and there are excellent literature reviews concerning it (e.g. Murphy, 1999; Core et. al., 2003; Main, 2004). Beginning with Jensen and Meckling (1976), principal-agent theory necessitates the alignment of the interests of the CEO with the interests of shareholders. Efficient corporate governance considerations should result in directors using the pay process as a way of achieving this (Finkelstein and Hambrick, 1988; Gomez-Mejia, 1994; Daily et al. 1998).

In addition to CEO compensation, researchers also pay attention to non-executive employees' incentive payments (Core and Guay, 2001). The corporate use of restricted shares and share options for non-executive employees is widespread and growing. For example, in a sample of 756 firms with option plans during the years 1994-1997, Core and Guay (2001) report that the number of options outstanding to all non-executive employees exceeds 6.9% of the number of shares outstanding. Non-executive employees hold 67% of these options. On a per-employee basis, the mean (median) of non-executive employees hold option portfolios valued at over $17,000 ($3,000). In Taiwan, in addition to base salary, top management team (TMT) members will receive bonuses in the form of several months' base salary, restricted shares, and share options[140]. Other, lower-level non-executive employees will be granted bonuses in the form of several months' base salary and restricted shares. Lower-level non-executive employees seldom receive share options. Restricted shares rather than share options are used most commonly as incentive payments. Unlike in most western countries, in Taiwan it is increasingly common to grant

[140] Taiwanese companies grant warrants instead of share options to CEOs. The detailed information will be discussed in Section 8.2.1.

non-executive employees restricted shares.

Prior studies that investigate the relationship between CEO compensation and board composition and ownership structure generally focus on the UK and the US (Gomez-Mejia and Wiseman, 1997; Murphy, 1999; and Core et al., 2003). Systematic research outside of the US and the UK on CEO compensation is still in its infancy, mostly due to data limitations (Kato and Long, 2004). In Asia, data on CEO compensation are typically not disclosed publicly. Most researchers use average top executives' compensation[141], for instance, Kaplan (1994a), Xu (1997), Ang and Constrand (1997), Joh (1999), and Kubo (2003, 2005) in Japan; Kato, Kim and Lee (2004) in Korea; Fung et al. (2002) and Buck et al. (2006) in China. The rare exception is Kato and Kubo (2006) who use precise data on Japanese CEO compensation. However, their data comes from a "major compensation consulting firm" that is not available to other researchers. Therefore, this thesis does not include the empirical analysis of CEO compensation in Japan because the CEO compensation in Japan is still a topic which is difficult to obtain precise data. Most data are vague or confidential (Kubo and Kato, 2006).

A sample of Taiwanese companies listed on the Taiwan Stock Exchange Corporation (TSEC) from 2001 to 2004 is examined. The sample differs from previous studies in two aspects. First, because of the reform of corporate governance practices, the current Taiwanese regulations and laws on corporate governance require more disclosure of compensation information, which enables us to obtain data concerning top executives' and non-executive employees' incentive payments, such as restricted shares. Taiwanese companies did not disclose detailed compensation information before 30th January, 2001. Some Taiwanese companies started to disclose detailed and individual compensation information in the annual reports after 2004. Therefore, this thesis takes a step towards filling this gap. We will use the latest data to investigate the relationship between the corporate governance mechanism and top executives' compensation in Taiwan. In Asia, Taiwan is one of these few countries

[141] Because of data limitations, prior research only considers cash compensation. Average top executives' cash compensation in prior literature is calculated as dividing the sum of all top executives' cash compensation by the number of top executives.

that disclose detailed top executives' compensation data, such as cash, restricted shares, and options. This gives us an opportunity to observe the application of Anglo-American corporate governance mechanisms in Asian countries.

Second, although on the surface the governance system of listed companies in Taiwan and the West appear similar, for example, the fact that CEOs and CFOs exist in both Taiwanese and American companies, ownership structure and board composition are very different. The main feature is the existence of government ownership and the dominance of government appointed directors in Taiwan. The existence of political involvement is very common in Asia. For example, in a typical Chinese listed company, 59.30% of shares are held by the government (Kato and Long, 2004) and the government has more than 20% ownership in over 10% of listed Singaporean companies (Mak and Li, 2001). Political constraints influence executive compensation by applying political pressure through the regulatory process (Joskow et al., 1993, 1996). Based on the grabbing hand model argued by Shleifer and Vishny (1998), politicians may pursue their own profits at the expense of the companies' interests, the question we ask is, do non-government-licked companies (non-GLCs) better align the interests of top executives with the interests of shareholders? Therefore, we divide the whole sample into two groups – government-linked companies (GLCs) and non-government-linked companies (non-GLCs) and examine whether these two groups possess the same characteristics concerning top executives' compensation. A company is classified as a GLC if there is at least one government-appointed director on the board in 2001 or if government ownership exceeds 5% in 2001.

In this chapter we pay attention to the grants of incentive payments, including restricted shares and share options as well as discussing the institutional background in Taiwan concerning top executives' compensation and non-executive employees' incentive payments. Our focus is consistent with previous research that has investigated compensation and the efficiency of the governance mechanism. We would note, however, the differences of corporate governance between Taiwan, the US, and the UK. We first describe the composition of top executives' compensation

and incentive payments in Section 8.2.1. The institutional background of top executives' compensation and non-executive employees' incentive payments in Taiwan is introduced in Section 8.2.2. In Section 8.3 we will focus on the remuneration committee and discuss the situations in Taiwan. Finally, we draw our conclusions in Section 8.4.

8.2 Top Executives' Compensation and Non-executive Employees' Incentive Payment

8.2.1 The Composition of Top Executives' Compensation and Non-executive Employees' Incentive Payments in Taiwan

Prior studies usually investigate the compensation packages of three groups: directors, top executives (i.e. CEO and CFO), and other non-executive employees (e.g. Core et al., 2003; Core and Guay, 2001, 2002). In Taiwan, however, the structure and disclosure of directors' compensation is very different from that of top executives' compensation. First, unlike in western countries, in Taiwan, CEO compensation is not disclosed together with directors' compensation, but with that of other senior executives. Most Taiwanese companies only disclose two kinds of compensation before 2004: (1) the sum of top executives' compensation; (2) the sum of all directors' compensation. That is, we could not obtain any information of CEO compensation from the directors' compensation. Second, Taiwanese companies seldom grant shares and share options to directors. In Taiwan, directors' compensation is mainly composed of base salary and cash bonuses, which are distributed when firm performance is good. Given this situation, if we examine the structure of CEO compensation, the directors' compensation may not reveal related information. Therefore, in this thesis we focus on top executives' average compensation because this group receives the most incentive payments.

In order to align executives' and shareholders' interests, most executives' pay packages in the US and the UK contain four basic components: (1) a base salary; (2)

an annual bonus tied to accounting performance (short-term incentive); (3) share options; (4) long-term incentive plans (including restricted share plans and multi-year accounting-based performance plans) (Murphy, 1999). However, the structure of top executives' compensation in Taiwanese companies is different. There are four main components in top executives' compensation in Taiwan: (1) a base salary; (2) the year-end bonus; (3) the employees' bonus; (4) share options. Employees' bonuses are not only distributed to top executives but also to non-executive employees. Although on the surface, the structure of top executives' compensation and non-executive employees' compensation in Taiwan is not different from that in the US, there are distinct differences in the detail. These differences mainly occur in the year-end bonuses and the employees' bonuses. If we use the classification used by Murphy (1999), we can roughly view the year-end bonus as an annual bonus tied to accounting performance (short-term incentive) and the share-based bonus as a long-term incentive plan (LTIP).

In Taiwan, most year-end bonuses are composed of cash, whereas most of employees' bonuses are composed of cash and shares. Table 8-1 presents the components of the year-end bonuses and employees' bonuses. Regarding the year-end bonus, some companies might distribute cash to employees (including senior executives and CEOs) in the form of several months' base salary at the end of each year when profits are 'good', but "typically there is no direct link between the amount of year-end bonuses or extra salary and accounting profit" (Chen, 2002, p.22). This is the main difference between a year-end bonus and an annual bonus tied to accounting performance (short-term incentive) as defined by Murphy (1999). Table 8-1 explains the difference between the year-end bonus and the employees' bonus.

Table 8-1 The difference between the year-end bonus and the employees' bonus

	cash	shares
year-end bonus	V	
employees' bonus	V	V
Murphy (1998) classification	short-term incentive	long-term incentive

For most Taiwanese companies, the year-end bonus is essentially another form of base salary because they have a policy or 'tradition' of setting it at a fixed number of months of base salary. According to the tradition, as long as the earnings are not bad, the company must distribute the year-end bonus to employees, including the top executives, such as the CEO and CFO. The pay-performance sensitivity of the year-end bonus is very low (Chen, 2002). To sum up, the year-end bonus can be defined as a portion of the base salary. Table 8-2 shows the recent conditions of the year-end bonus system in different industries in Taiwan. We can observe that it ranges from no bonus to a twelve-month base salary payment.

Table 8-2 Summary of the extent of year-end bonuses in Taiwan by industry, 2000

Industry	Value of payment (months of salary per year)
Cement	1-4 months
Foods	1-2 months
Plastic	1-5 months
Textiles	less than 1-2 months
Paper	1-2 months
Housing	0-2 months
Retailing Channel	0-2 months
Automobiles	2-10 months
Telecommunications	4-11 months
Semi-Conductor	5-6 months
Internet Service Provider	2-4.5 months
Construction	1-4 months
Finance	2-4.5 months
Securities	Up to 12 months
Miscellaneous	1.5-3 months

Source: Adapted from Cin et al. (2003, p.923)

Most Taiwanese companies distribute year-end bonuses of two months' worth of salary on average to their employees each year (Cin et al., 2003). However, the range is very flexible. In some Taiwanese companies, the year-end bonuses vary according to firm performance. Some companies will pay more year-end bonuses when the companies yield high returns on their investments. Although it is not necessary to have a direct link between the amount of year-end bonus and accounting profit (Chen, 2002), the year-end bonus sometimes changes with firm performance, which means that the nature of the year-end bonus is "profit-sharing" (Cin et al., 2003).

Unfortunately, there are no systematic and reliable data or statistics available concerning the year-end bonus in Taiwan. As long as the disclosure is more transparent in Taiwan, the year-end bonuses would be a valuable area for future research.

Based on the concept of "profit-sharing" (Cin et al., 2003), Taiwanese companies also distribute employees' bonuses to employees and top executives when the company is profitable. There are two differences between the year-end bonuses and employees' bonuses. First, companies can grant employees' bonuses in cash or in shares, but only grant year-end bonuses in cash. Second, it is a 'tradition' for companies to grant year-end bonuses but not employees' bonuses. The board of directors can decide whether to grant, what to grant, and how many bonuses to grant to top executives and employees. If a company grants employees' bonuses in cash, we can view it as an annual bonus tied to accounting performance (a short-term incentive). If a company grants the employees' bonus in restricted shares, we can roughly view it as a long-term incentive plan.

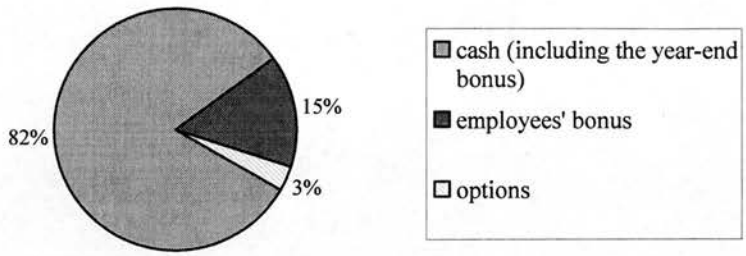
However, the grant of restricted shares in employees' bonuses in Taiwan is very different from LTIPs in the US and the UK. LTIPs are here defined as grants of cash and shares (usually shares) with performance limitations (Buck et al., 2003), which means that executives cannot obtain a portion of restricted shares according to the contract until they reach a certain level of performance in the future. Although Taiwanese companies also grant restricted shares to employees (including CEOs and senior executives), the amount of grants depends on past performance rather than future performance. If firm performance in this year is good, employees will be granted an amount of restricted shares at the end of this fiscal year. Based on the difference between general LTIPs and the grants of restricted shares in Taiwan, we can anticipate different empirical results between LTIPs and restricted shares.

Another difference between LTIPs and Taiwanese employees' bonuses is whether the company restricts the time within which employees can sell their shares. LTIPs are long-term incentives. By contrast, employees' bonuses are relatively short-term

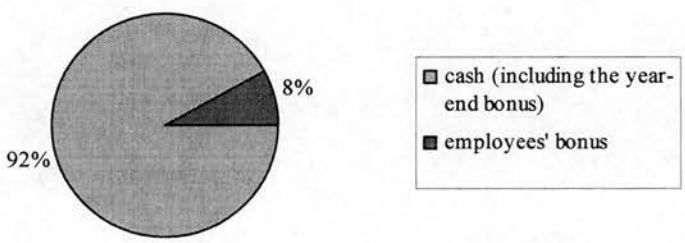
because many Taiwanese companies do not restrict the time within which their employees can sell their shares (Han, 2003; Cin et al., 2003). Although Company Law in Taiwan does approve the time limitation[142], most companies in Taiwan do not have such a restriction. To sum up, LTIPs tend to encourage employees to direct their efforts towards future performance whereas employees' bonuses in Taiwan are based on the profitability of the year prior to the shares being allocated. Based on the data we collected, Figure 8-1 presents an average top executives' compensation package and the situation of the non-executive employees' incentive payments in Taiwan. Figure 8-1 (A) presents the distribution of average top executives' compensation in 2004, Figure 8-1 (B) presents the structure of non-executive employees' compensation, and Figure 8-1 (C) presents the ratio of share-based employees' bonuses to total employees' bonuses.

[142] Company Law, Article 267 VI: …A company may restrain the shares subscribed by its employees under Paragraph One or Paragraph Two of the article from being transferred or assigned to others within a specific period of time which shall in no case be longer than two years…

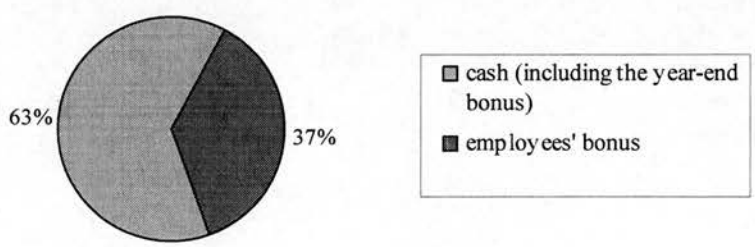
A. The structure of average top executives' compensation, 2004 *



B. The structure of non-executive employees' compensation, 2001-2004



C. The ratio of share-based employees' bonuses to total employees' bonuses, 2001-2004



* Because of data limitations, we can only obtain the data of employees' bonuses for top executives in 2004. Figure (A) only displays the structure of top executives' compensation in 2004.
Note: The value of employees' bonuses is calculated by par value of a share, which is NTD 10.

Figure 8-1 The components of top executives' compensation and non-executive employees' bonuses in Taiwan

In Figure 8-1, we can see that the employees' bonuses occupy a smaller portion in

non-executive employees' compensation (8%) than in top executives' compensation (15%). This indicates that the interests of top executives in Taiwan are more aligned with the interests of shareholders than the interests of non-executive employees. The ratio of share-based employees' bonuses on total employees' bonuses in Figure 8-1 (C) is 37%, which is similar to the findings of Chen (2002) who observes that the ratio of share-based employees' bonuses to total employees' bonus is 35.03% from 1997 to 1998. From Figure 8-1, we conclude that the incentive payments occupy a small portion in non-executive employees' compensation. Therefore, in this thesis we only examine the relationship between top executives' compensation and the corporate governance mechanisms.

8.2.2. The Institutional Background of Top Executives' Compensation and Employees' Incentive Payments in Taiwan

Both year-end bonuses and employees' bonuses are based on the concept 'profit-sharing'. The administration of profit sharing is regulated under three Taiwanese laws. Under Provision 40 of Factory Law, manufacturing plants should reward employees with bonuses if the plants are profitable. Factory Law was succeeded by the Fair Labour Standards Act, which was established on 30th July, 1984. Similar to the Factory Law, Provision 29 of the Fair Labour Standards Act also regulates that employers should reward qualified employees with bonuses or profits at the end of each year. In addition, Company Law requires companies to pay some percentage of their distributable net income each year as employees' bonuses. Companies are required by Company Law to retain 10% of reported net income each year as legal reserves before they distribute dividends and employees' bonuses, until the balance of legal reserves equals total authorised capital. There are four major Articles in Company Law that regulate the distribution of employees' bonuses in Taiwan:

1. Article 232.I[143]: A company shall not pay dividends or bonuses, unless its losses shall have been covered and a legal reserve shall have been set aside in accordance with the provisions of this Law.
2. Article 232.II: A company shall not pay dividends or bonuses, if there is no surplus earnings provided, however, that the aggregate of its legal reserve[144] exceeds fifty per cent (50%) of its paid-in capital.
3. Article 235. II[145]: The percentage of surplus profit distributable as employees' bonus shall be definitely specified in the articles of incorporation, unless otherwise approved specifically by the central authority in charge of the end-enterprise concerned.
4. Article 235. IV: Qualification requirements of employees, including the employees of subsidiaries of the company meeting certain specific requirements, entitled to receive dividend bonus may be specified in the articles of incorporation.
5. Article 240. I: A company may, by a resolution adopted by a majority of the shareholders present who represent two-thirds or more of the total number of its outstanding shares of the company, have the whole or a part of the surplus profit distributable as dividends and bonuses distributed in the form of new shares to be issued by the company for such purpose. In case the amount of balance of such distributable surplus profit is less than the par value (or a fraction) of one share, it shall be paid in cash.
6. Article 267 VI: ...A company may restrain the shares subscribed by its employees under Paragraph One or Paragraph Two of the article from being transferred or assigned to others within a specific period of time which shall in no case be longer than two years...

The employees' bonus rate must be specified in the Articles of Incorporation (Company Law, Article 235. IV). It can be either a fixed percentage (e.g., 5% or 10%)

---

[143] Article 232 was established on 7th December, 1983, and revised on 25th June, 1997 and 12th November, 2001.

[144] A certain level of capital has to be maintained to avoid automatic liquidation. Company Law or related regulations will regulate the appropriation of retained earnings.

[145] Article 235 was established on 9th May, 1980 and revised on 7th December, 1983 and 12th November, 2001.

or a range (e.g. no less than 5%). The board of directors determine the total amount of employees' bonuses according to the bonus rate specified in the Articles of Incorporation. If a range of possible bonus rates is specified, the board of directors have to decide the actual bonus rate and the total amount of bonus. After deciding the total amount of bonuses, the directors can determine the relative weight between shares and cash. The decided bonus rate, however, can be changed after the approval of shareholders in the annual shareholders' meeting (AGM). In this thesis, the research data are the employees' bonuses, which are approved by the shareholders in the shareholders' meeting.

The bonuses are only distributed to the employees (including top executives and lower-level employees) who are still in the company at the time of distribution, typically five to eight months after the year-end. The company must report and announce the distribution of dividends and employees' bonuses to the TSEC. Generally, according to the ranking, higher-level employees, such as CEO, would get a larger portion of the total bonuses. BenQ Corporation, for example, had 19 top management team (TMT) members in 2004. According to the ranking, the first ten members were awarded 71.44% of the bonuses that were distributed to the top management team members, and 11.24% of the total employees' bonuses.

Another important difference in the system of awarding employees' bonuses between the US and Taiwan is that Business Accounting Law (§64) in Taiwan regulates that distribution of employees' bonuses shall not be recorded as expenses or losses[146]. Therefore, Taiwanese companies record the employees' bonuses as the distribution of net income, which suggests that their value would not influence profits because it is not regarded as an expense and deducted from profits. Consequently, the profits of companies are overestimated. In May, 2006, the Taiwan Financial Supervisory Commission (SFC) passed the draft of new Business Accounting Law which deletes Article 64. The new Business Accounting Law may be implemented no later than January, 2008. However, although the new edition deletes Article 64, it does not require companies to record employees' bonuses as expenses. Relevant sets of laws

[146] Business Accounting Law, Article 64: Distribution of earnings of a business, such as dividend and bonus, shall not be recorded as expenses or losses.

on the record format still wait to be established in the future.

In addition to year-end bonuses and employees' bonuses, Taiwanese companies also grant warrants to CEOs and other senior executives, but seldom to directors and lower-level non-executive employees. In Taiwan, companies grant CEOs and senior executives warrants instead of share options. Although both warrants and share options give the holder the right to buy a specific share at a specific price over a set period of time, there are some differences between them. The fundamental difference between a standard share option and a call warrant is the dilution problem. In the case of a warrant, upon exercise, the company issues new shares, which are then delivered to the warrant holder. In the case of a standard call option, upon exercise, existing or new shares are delivered to the share option holder. That is, it is not necessary for the company that grants share options to employees to issue new shares upon exercise. The company can distribute treasury shares to employees who exercise share options. This issuing of new shares leads to a dilution of the existing equity and a lowering of the value of each individual share. Without the dilution effect, the valuation of share options and warrants is almost identical. There are some secondary differences between share options and warrants. For example, while warrants tend to have expiration dates that can extend as far as 15 years, share options tend to have a much shorter lifespan.

Companies in Taiwan could not grant warrants to their employees until 29th July, 2000. After revising Article 28-2 in the Securities and Exchange Act in 2000, Taiwanese companies started to grant call warrants to employees[147,148]. Nevertheless,

---

[147] Securities and Exchange Act, Article 28-2: In any of the following situations, a company whose stocks are either listed on a stock exchange or traded on the over-the-counter market may, upon the approval of a majority of the directors present at a directors meeting attended by two-thirds or more of directors, buy back its shares from the centralized securities exchange market or over-the-counter market or in accordance with Paragraph 2 of Article 43-1, without being subject to the provisions of Paragraph 1 of Article 167 of the Company Act:

1. Where the buyback is for transferring shares to its employees;
2. Where the buyback is for equity conversion in coordination with the issuance of corporate bonds with subscription right, special shares with subscription right, convertible corporate bonds, convertible special shares or stock/subscription warrants; or
3. Where the buyback is required to maintain the company's credit and shareholders' equity and the shares so purchased are cancelled.

(omit)

[148] Please refer to Securities and Exchange Act, Article 22-2, 25, 28-2, 157, and 157-1 for more

granting employees' bonuses is still more popular than granting call warrants in Taiwan. Up until July, 2002, only 40 listed companies had granted call warrants to employees. Among these 40 companies, 90% belong to the electronics industry. Most call warrants are granted to top executives, such as the CEO and CFO. From the end of 2000 to the beginning of 2006, 174 companies had applied to issue call warrants. This reveals that granting call warrants is a developing phenomenon in Taiwan. However, unlike the US, there was no formal Statement or Article to regulate the calculation of the call warrants granted to employees until March, 2003. On 17th March, 2003, the Accounting Research and Development Foundation (ARDF) in Taiwan issued declaratory statutes No. 70, No. 71, and No. 72, which encourage companies to use the fair value of the grants to reflect the compensation-based share options in the financial statements. The Taiwanese government now intends to refer to Statement 123(R) in the US, which regulates that the cost of all share options and equity-based compensation should be reflected in the financial statements based on the estimated fair value of the awards.

In addition, there is no formal Statement or Principle to regulate the disclosure of compensation. On 30th January, 2000, the Securities and Futures Bureau in Taiwan only issued Announcement No. 0920000457, which requires that listed companies should disclose employees' cash bonuses, employees' share bonuses, and the directors' compensations in their annual reports. However, this Announcement does not regulate the mode of disclosure. Therefore, most Taiwanese listed companies only disclose the total sum of all directors' compensation, including the chairman's compensation. This Announcement also does not require the disclosure of individual top executives' compensation. Therefore, Taiwanese companies seldom disclose individual CEO compensation. In 1998, only 23 listed companies disclosed individual CEO compensation. Other companies only disclose the total sum for all the top executives. From 2000 to 2004, almost all Taiwanese listed companies disclosed the sum of all top executives' compensation. The only exception is for call warrants. When a company grants warrants to employees, it must disclose the amount of the warrants and the employee's name. After 2005, more and more listed

---

detailed regulations.

companies started to disclose the composition of top executives' compensation (e.g., base salary, cash bonuses, restricted shares, and warrants). Unfortunately, most Taiwanese companies have not disclosed individual CEO compensation until now. Therefore, in this thesis we could not obtain precise data for CEO compensation unlike other studies, which use data from American companies. We use average top executives' compensation to measure CEO compensation. Nevertheless, compared to other Asian countries, which have low disclosure transparency, such as Japan and China, in Taiwan, the data of top executives' compensation is more transparent and precise. This gives us a good opportunity to examine the adoption of the Anglo-Saxon compensation system in Taiwan.

8.3 Remuneration Committee

8.3.1 Literature Review concerning Remuneration Committees

Boards of directors are required, as part of their main responsibilities, to be responsible for monitoring executives, assessing senior executives' performance and determining appropriate compensation packages (e.g., Kesner, 1988; Daily et al., 1998). An efficient board must align the interests of executives and shareholders. In the UK, the Combined Code (2003) states that "the board's role is to provide entrepreneurial leadership of the company within a framework of prudent and effective controls which enables risk to be assessed and managed" (Paragraph A.1). According to the UK laws, the directors should act in accordance with the interests of the company and possess skills to carry out their duties (Mallin, 2004). It is fairly well accepted that many board functions are carried out by board sub-committees – a nominating committee, an audit committee, and a remuneration (or compensation) committee. The three sub-committees are recommended in Australia, Belgium, France, the Netherlands, Sweden, the UK, and the US (Monks and Minow, 2004). In the UK, the Cadbury Report (1992) recommended that an audit committee and a remuneration committee should be adopted and stated that a nomination committee can make the board appointments process more transparent. The Higgs Report (2003)

also found that most listed companies have an audit and a remuneration committee. The Combined Code (2003) recommended also having a nomination committee to lead the board appointment process. Although the composition of these committees changes, it is generally agreed that independent directors have a determinant role. Among the three committees, the remuneration committee catches most academic attention because it provides scrupulous monitoring of the level of executive compensation and the composition of compensation in its own company. Existing evidence indicates that the overwhelming majority of companies in the US and the UK have established remuneration committees and that they are comprised entirely of non-executive directors (Conyon et al., 2000).

Most literature concerning remuneration committees is based on the situations in the US and the UK (e.g. Main and Johnston, 1993; Conyon, 1997; Conyon and Peck, 1998; Daily at al., 1998). Among these studies, the most popular topic is whether remuneration committees reinforce the pay-performance relationship. In the UK, the arrangement of remuneration committees became a requirement post-Cadbury (1992) (Main, 2004). Main and Johnson (1993) examine the difference in CEO compensation between companies with and without a remuneration committee in 220 large UK companies by using data in 1990. They find that the presence of a remuneration committee will increase CEO compensation instead of decreasing it. After thorough examination, they find that the high level of total compensation packages tend to be in the form of share options, which means that the remuneration committee strengthens the alignment between the interests of CEOs and the interests of shareholders through changing the structure of executive compensation. Similarly, by using panel data on large, publicly traded companies in the UK between 1991 and 1994, Conyon and Peck (1998) find that the existence of a remuneration committee comprising a high proportion of outsiders is positively associated with CEO compensation. These results are consistent with other studies that have sought to measure board control and vigilance. Boyd (1994) finds that "contrary to expectations, the ratio of insiders was negatively associated with compensation" (1994, p.341). Some other studies also indicate this conclusion (Core et al., 1997 and Lambert, et al., 1993). Peck and Ruigrok (2002) also reveal that remuneration

committees are related to higher CEO compensation in a sample of 126 German companies between 1996 and 2000.

However, Conyon (1997) finds that the presence of a remuneration committee is associated with lower CEO compensation between 1988 (60% of his sample had a remuneration committee) and 1993 (96% of his sample had a remuneration committee). This contradiction casts some doubts regarding the robustness of the empirical results and implies that the best governance reforms may lead to unintended results (Main, 2004). Therefore, some studies start to engage in a clinical examination of the non-consistent situation (Main, 2004) by examining the composition of committees, the composition of compensation etc. Daily et al. (1998), using panel data from 1991 to 1994, find that the composition of the remuneration committee (i.e. the ratio of affiliated or independent directors, or the proportion of CEOs serving on a remuneration committee) does not have significant influence on the level and structure of CEO compensation. On the contrary, O'Reilly, Main, and Crystal (1988), Main, O'Reilly, and Wade (1995), Westphal and Zajac (1995), and Zajac and Westiphal (1996) investigate how the composition of the remuneration committee, the relationship between directors, and the similarity of the remuneration committee members and the CEO affect the pay determination process. According to their empirical results, all these factors will influence the pay determination process in ways that do not necessarily follow the agency theory perspective. Given these varied results, we can conclude that research into this topic has yet to reach a consensus.

The adoption of a remuneration committee has lasted for two years at most in Taiwan. Therefore, it is pioneering to introduce the institutional background of remuneration committee in Taiwan. It also gives us a good opportunity to examine the establishment of a remuneration committee outside the US and the UK, which have been investigated widely. Therefore, we will now discuss the institutional background of remuneration committees in Taiwan.

8.3.2 The Institutional Background of the Remuneration Committee in Taiwan

Remuneration committees give attention to the level and composition of compensation in its own and peer group companies (Main, 2004). The adoption of sub-committees on a board is still a new concept in Taiwan. From the viewpoint of the legal system, Taiwan is similar to the US, Germany, and Japan, which are based on civil law rather than common law (Filatotchev et al., 2005). However, from the viewpoint of the law that regulates the adoption of the remuneration committee, Taiwan is more similar to the UK, which utilizes a 'comply or explain' mechanism (Mallin, 2004). Laws in Taiwan do not require the board of directors to establish a compensation committee. Therefore, until the end of 2004, only 3 GLCs and 7 non-GLCs adopted sub-committees on their boards. In the "Corporate Governance Best-Practice Principles for TSEC/GTSM Listed Companies"[149], the relevant recommendations in Article 27 and Article 28 are:

(Article 27) For the purpose of developing monitoring functions and strengthening management mechanisms, the board of directors of a TSEC/OTC listed company may, taking into account the basis of the size of the board and the number of the independent directors, set up audit, nomination, compensation or any other functional committees and have them stipulated in the articles of incorporation. Functional committees shall be responsible to the board and submit the proposals to the board of directors for approval.

(Article 28) It is advisable that a TSEC/OTC listed company make it the first priority to set up the audit committee...The audit committee shall consist of at least one independent director and be convened by the same. It would be advisable that independent supervisors be invited to sit in at the meeting. At least one of the independent directors as

[149] Taiwan Stock Exchange Corporation (TSEC) is the stock exchange in Taiwan and Gre-Tai Securities Market (GTSM) is the over-the-counter market in Taiwan. This principle was announced on 4th October, 2002 and was revised on 19th October, 2005.

referred to in the preceding paragraph shall have professional expertise in accounting or finance.

On 11th January, 2006, the Taiwanese government amended the Securities and Exchange Act to reform corporate governance in Taiwan. The new Act will be implemented on 1st January, 2007[150]. It establishes several new Articles concerning the audit committees:

(Article 14-4) A company that has issued stock in accordance with this Act shall establish either an audit committee or a supervisor...The audit committee shall be composed of the entire number of independent directors. It shall not be fewer than three persons in number, one of whom shall be convener, and at least one of whom shall have accounting or financial expertise.

According to the "Corporate Governance Best-Practice Principles for TSEC/GTSM Listed Companies" and the new Securities and Exchange Act, which was amended in January, 2006, adopting a remuneration committee is not an obligation under Taiwanese laws. It is only a recommendation principle. Therefore, Taiwanese companies seldom have sub-committees on the board, not to mention remuneration committees. The Taiwan Semiconductor Manufacturing Company (TSMC) is the first Taiwanese company to adopt sub-committees. In line with the principle, TSMC board of directors established an audit committee in 2002 and a remuneration committee in 2003[151]. As of March 2005, the remuneration committee was comprised of five members: three independent directors serving as voting members of the committee, and two non-voting directors. The committee meets at least four times a year.

Before 2003, only the Taiwan Semiconductor Manufacturing Company (TSMC) had a remuneration committee on the board. Following TSMC, some companies started to have an audit committee and remuneration committee. Until the end of 2004,

[150] Article 183, Securities and Exchange Act (amended on 11th January, 2006).
[151] Please refer to Appendix 2 for the comparison between Taiwanese and US laws.

among the largest 200 companies whose data are available, there are 10 companies having a remuneration committee, 7 are non-GLCs and 3 are GLCs[152]. Unfortunately, since the presence of remuneration committees is a new phenomenon, there is no requirement to disclose the composition of it. We thus cannot take the composition of a remuneration committee into consideration in this thesis and only attempt to examine the relationship between the average top executives' compensation and the existence of remuneration committees in Taiwan. As far as we know, this is the first research concerning the institutional structure of remuneration committees and their existence in Taiwan.

Because of the sparseness of data, it is not meaningful to run regressions with 3 GLCs and 7 non-GLCs that adopt sub-committees on their boards. Hence, we use the cross tables to examine the influence of remuneration committees on the average top executives' compensation in Taiwan. From Table 8-3, we can observe that the change ratio of the average top executives' compensation in GLCs that have remuneration committees in 2004 is 47.51%, which is bigger than that in GLCs that never have remuneration committees (10.59%). Similarly, the change ratio of the average top executives' compensation in non-GLCs that have remuneration committees in 2004 is 73.83%, which is bigger than that in non-GLCs that never have remuneration committees (18.71%). It indicates that a company with a remuneration committee will have higher average top executives' compensation. This phenomenon is more obvious in non-GLCs because the increasing rate is 47.51% in GLCs and 73.83% in non-GLCs. The statistics are consistent with the findings of Main and Johnston (1993), Conyon and Peck (1998), and Peck and Ruigrok (2002).

[152] Seven non-GLCs are (SIC code): Fubon Financial Holding Co., Ltd. (2881), AU Optronics Corp. (2409), ACER Incorporated (2353), Advantech Co., Ltd. (2395), Continental Engineering Corp. (2526), Tsann Kuen Enterprise Co., Ltd. (2430), and TSRC Co. (2103). Three GLCs are (SIC code): TSMC (2330), Macronix International Co., Ltd (2337), and Systex Co. (2343). One GLC, United Microelectronics Corp. (2303), started to have the remuneration committee in the beginning of 2005.

Table 8-3 The Cross-tabulation between remuneration committees and the average top executives' compensation

GLCs

	never have remuneration committee	having remuneration committee in 2004
the number of observations	58	3
ATEC (2003)	5,985,309.75	18,762,038.83
ATEC (2004)	6,618,941.44	27,675,282.28
Increasing percentage (%)	10.59	47.51

Unit: Taiwanese dollars, %

non-GLCs

	never have remuneration committee	having remuneration committee in 2004
the number of observations	131	7
ATEC (2003)	6,115,334.44	6,155,822.00
ATEC (2004)	7,259,495.96	10,700,537.66
Increasing percentage (%)	18.71	73.83

Unit: Taiwanese dollars, %

Unfortunately, before 2004, Taiwanese companies only disclose the sum of top executives' compensation. It is impossible to obtain the data of top executives' incentive payments before 2004. Therefore, we cannot analyse the change of top executives' incentive payments after having a remuneration committee on the board. However, the relationship between the top executives' incentive payments and adopting remuneration committees in Taiwan is an important topic that is worthy of examining in the future. Moreover, with the reform on corporate governance in Taiwan, more information is disclosed by companies, such as the composition of sub-committees and the relationship between directors and executives. We can thereby engage in a more clinical examination of the situation and compare it with the situation in other countries that have adopted remuneration committees for a long time.

8.4 Conclusion

In addition to firm performance and DOI, this thesis examines corporate governance in Taiwan from another dimension. We try to investigate whether there is a significant difference between top executives' compensation in GLCs and non-GLCs. Before discussing the variables and empirical results, this chapter has provided the necessary context for the research conducted in this thesis by introducing the

institutional background of top executives' compensation and employees' bonuses in Taiwan. We can conclude that the development and application of the incentive payments in Taiwan is improving but still developing. Furthermore, compared to other developed countries, such as the US and the UK, the alignment between the interests of top executives and the interests of shareholders in Taiwan is comparatively weak. We can reach this conclusion from four main aspects.

First, Taiwanese companies prefer year-end and employees' bonuses rather than long-term incentive plans (LTIPs). Section 8.2.1 indicates that the nature of the year-end and employees' bonuses is "profit-sharing" (Cin et al., 2003). Based on the concept of 'profit-sharing' (Cin et al., 2003), Taiwanese companies also distribute employees' bonuses in cash or shares when the company is profitable. If the company grant employees' bonuses in cash, we can view it as an annual bonus tied to accounting performance (a short-term incentive payment). If the company grants employees' bonuses in restricted shares, we can roughly view it as a long-term incentive payment. However, the grant of restricted shares in employees' bonuses in Taiwan is very different from LTIPs. LTIPs here are defined as grants of cash and shares (usually shares) with performance limitations (Buck et al., 2003). Only when executives reach a level of performance in the future, can they obtain a portion of restricted shares according to the contract. In Taiwan, the amount of grants depends on past performance rather than future performance. If firm performance in this year is good, employees will be granted an amount of restricted shares at the beginning of next year. Another difference between LTIPs and Taiwanese employees' bonuses is that many Taiwanese companies do not restrict the time within which employees can sell their shares (Han, 2003; Cin et al., 2003), although Company Law in Taiwan approves such a restriction Therefore, compared to LTIPs, the employees' bonuses in Taiwan are relatively short-term.

Second, compared to the US, in Taiwan, enforcement of the relevant laws is not strong. Most relevant laws only recommend rather than enforce companies to adopt some mechanisms, such as sub-committees on a board. Therefore, although the "Corporate Governance Best-Practice Principles for TSEC/GTSM Listed

Companies" recommends companies to adopt sub-committees on the board, only 10 Taiwan companies had done so up until 2005. To date, the number of companies which have adopted a remuneration committee on the board is still small.

Third, compared to the US and the UK, in Taiwan, the disclosure of top executives' compensation is not so transparent. This viewpoint can be proved by the data presented in Section 9.3.3. For example, before 2004, most Taiwanese companies only disclose the sum of top executives' compensation. After 2004, some Taiwanese companies start to disclose individual CEO compensation. Moreover, although Taiwanese companies grant shares and warrants to CEOs and top executives, they do not disclose detailed information. Generally, most Taiwanese companies will disclose the sum of top executives' cash compensation and share-based compensation. We do not know the portion or the calculation method of share-based compensation. This opaque disclosure of top executives' compensation in Taiwan is a serious obstacle for future research.

Finally, in addition to the prior discussion, which indicates that the disclosure of compensation and the enforcement of laws are not enough in Taiwan, the calculation of compensation also requires improvement. Since the grant of warrants is still new, unlike in the US, there is no formal Statement or principle to regulate the calculation of call warrants which are granted to executives. Generally, Taiwanese companies only disclose the amount rather than the value of warrants granted to executives, the exercise price, the share-price on the grant date, and the expiration date. Additionally, due to the 'profit-sharing' concept, the employees' bonuses in Taiwanese accounting is recorded as the distribution of profits rather than expense, which is quite different from that in the US, which is regulated by Statement 123 (R) issued by the Financial Accounting Standard Board (FASB).

In conclusion, compared to other developed countries such as the US and the UK, the establishment of laws and the level of disclosure in Taiwan are less sound and less transparent. Fortunately, the Taiwanese government has recently improved corporate governance. For example, in 2002, the TSEC and the GreTai Securities Market

(GTSM, the over-the-counter market in Taiwan) jointly released the first set of corporate governance best-practice principles for listed companies. Drawing on both global standards and Taiwanese Company Law, the document outlines a system of independent directors, board committees (starting with audit committee), and independent supervisors. Additionally, more and more Taiwanese companies have started to disclose detailed information on CEO compensation, incentive payments, and the composition of committees. Since Taiwan is a country with relational capitalism[153], the influence of adopting a remuneration committee and having incentive payments may not be the same as in other countries with stock market capitalism. Moreover, the legal system and the institutional background in Taiwan are also different from western countries. Therefore, the comparison of CEO compensation in Taiwan with other Asian and western countries by using this newly-disclosed Taiwanese data is a critical topic for the future. In order to fill the gap, this thesis tries to use the latest data to examine top executives' compensation in Taiwan more precisely. In due course, with the reform of corporate governance in Taiwan, it may be possible to use individual CEO compensation data. But it is hoped that the results in this thesis at least point the way to the interesting insights available regarding top executives' compensation in Taiwan. The subsequent chapter explain the hypotheses that will be tested in this thesis. Owing to data limitations, the calculation of top executives' compensation and incentive payments under the constraints of data unavailability will also be explained in the subsequent chapter.

[153] Please refer to Section 2.1 for relational capitalism.

Chapter Nine
Theory and Hypotheses on Top Executives' Compensation

9.1 Introduction

The review in Chapter 8 of the relevant literature regarding the institutional background of top executives' compensation in Taiwan highlighted corporate governance reform in Taiwan and the differences between Taiwan and the US/UK. Based on the recent reform, corporate governance in Taiwan has converged toward the Anglo-Saxon style, which adopts restricted shares, share options, and sub-committees of the board to align the interests of CEOs with those of shareholders. More and more Taiwanese companies have advocated employees' bonuses and share options. Prior to 2000, apart from some subsidiaries of US multinational corporations in Taiwan and a few Taiwanese firms listed on foreign stock markets, very few local companies adopted share option plans. One of the major reasons has been the lack of a legal framework for such plans. On 30th June, 2000, the relevant laws were amended and several new provisions concerning the regulations of share options were added. The new amendments allow the publicly traded companies to buy back their own outstanding stock and to grant employees share option certificates (similar to US stock options) as incentives after the agreement of at least one-third of the board directors. The amendments thus provide a legal foundation for the adoption of share options and may be expected to lead to the growth in popularity of granting incentive payments to employees in the future (Cin et al., 2003).

Prior studies that examine the relationship between executive compensation and board and ownership structure generally find that firms with a more effective governance structure tend to have lower executive compensation (e.g. Coles et al., 2001; Core and Guay, 2001; Ittner et al., 2003). In this chapter, the samples and data sources will be introduced and, in order to understand the dynamics underlying these

incentive payments, we build hypotheses based on previous literature (e.g., Ittner et al., 2003; Bryan et al., 2000; Yermack, 1995; Core and Guay, 1999, 2001), to examine whether governance structure is associated with top executives' compensation. Based on prior research, we include several determinants, such as ownership structure, cash constraints, past firm performance, and investment opportunities, to observe whether these variables determine the level and the structure of top executives' compensation. Since few Taiwanese companies disclose individual CEO compensation, CEO compensation in this thesis is measured by the average top executives' compensation (ATEC).

In Section 9.2.1 and Section 9.2.2, we will develop hypotheses regarding the level and the structure of top executives' compensation. The sample and variables will be introduced in Section 9.3.1 and Section 9.3.2. We will also define our measures of top executives' compensation in Section 9.3.3. To test our hypotheses regarding whether an efficient governance mechanism affects the level and the structure of top executives' compensation, we develop empirical models in Section 9.4. We will use several different empirical methods to fit the data, such as the fixed-effect model, the Tobit model, and the random-effects Tobit model. The conclusions are discussed in Section 9.5.

9.2 Hypothesis Development and Empirical Specification

9.2.1 The Determinants of Top Executives' Compensation

There are many prior studies into the determinants of CEO compensation and a thorough review of this subject has been made in several papers (Gomez-Mejia and Wiseman, 1997; Murphy, 1999; Core et al., 2003). The research results, however, are not encouraging. Tosi et al. (2000) use a meta-analysis to examine CEO compensation in the US. They conclude that 40% of compensation variance is associated with firm size and only 5% can be attributed to firm performance. They argue that the incentive alignment statements of CEO compensation are "weakly

supported at best" (Tosi et al., 2000, p.329). Barkema and Gomez-Mejia (1998, p.329) claim that "...the failure to identify a robust relationship between top management compensation and firm performance has led scholars into a blind alley". These arguments and findings may contradict agency theory and disconcert researchers, but they also reveal that the causality between CEO compensation and firm performance is far from clear. In order to clarify the causality between pay and performance, Appendix 5 conducts panel Granger causality test. However, Garen (1994) indicates that it is still appropriate to perform medium-size empirical analysis from the viewpoint of agency theory.

In general, government-linked companies (GLCs) are hypothesised to be less efficient than non-GLCs because their main objective may not be profit gaining and therefore bad corporate governance is the result (e.g. Mascarenhas, 1989; Agrawal and Knoeber, 2001; La Porta et al., 2002; Sun et al., 2002; Shleifer, 1998; Megginson and Netter, 2001; Schipani and Liu, 2001). Because of different incentives, GLCs and non-GLCs may present differences in corporate governance mechanisms and compensation. We categorise the observations in our data into a GLC group and a non-GLC group. There are two criteria for classification. When there are one or more directors from the government or state-owned enterprises, or the percentage of government shares to total outstanding shares exceeds 5%[154], the company will be classified as a GLC, otherwise the company is a non-GLC. We can compare whether there is a significant difference in the relationship between top executives' compensation and the corporate governance mechanism between GLCs and non-GLCs.

There are three main research questions regarding this topic. First, is there a relationship between top executives' compensation and other governance variables? Second, according to prior research (e.g. Coles et al., 2001; Engel et al., 2001; Core and Guay, 2001; Ittner et al., 2003), corporate governance mechanisms provide an alternative to the use of incentive payments. We would like to examine whether this kind of substitution appears in Taiwan, a country with political involvement from the

[154] In Taiwanese annual reports, a blockholder is defined as a shareholder whose ownership exceeds 5% or who is the top shareholders.

government and external governance from banks. The third question we ask is, do non-GLCs better align the interests of top executives with the interests of shareholders? The hypotheses for GLCs and non-GLCs are the same. If non-GLCs are more efficient than GLCs, the substitution between corporate governance mechanisms should be more significant (Coles et al., 2001). By clarifying the three questions, we can first understand weather corporate governance mechanisms in Taiwan are efficient. Furthermore, we can also test whether GLCs are less efficient than non-GLCs on top executives' compensation.

We will now explain the hypotheses; the calculation of the variables will be explained in Section 9.3.2 and Section 9.3.3.

Past Firm Performance

Perhaps the most complicated question raised on the subject of CEO compensation is the relationship between firm performance and compensation. Previous studies typically related firm performance to CEO compensation (Jensen and Murphy, 1990). Firm performance reflects the executives' potential incentive to pursue the interests of shareholders. Most research regarding the relationship between executive compensation and firm performance has been firmly rooted in agency theory. According to agency theory, executive compensation is one part of corporate governance in general and is used to align the interests of opportunistic executives with the interests of shareholders (Shleifer and Vishny, 1997). In other words, agency theory emphasises the design of executive compensation packages, which are constructed by shareholders in order to improve the alignment between the interests of executives and the interest of shareholders. Although many studies focus on the pay-performance relationship, there is presently no theoretical or empirical consensus on how share-based compensation affects firm performance (Core et al. 2003, p.34). Prior literature indicates that there may be a two-way relationship between performance and compensation (Kole, 1996; Buck et al., 2006). On one hand, agency theory puts emphasis on the design of executives' compensation

packages by shareholders in order to improve the alignment of principal-agent interests. On the other hand, the value of an executive's share-based compensation depends upon the share price performance in that an increase in share price automatically raises the value of share-based compensation. Therefore, share-based compensation may guarantee a significant relationship running from performance to pay (Buck et al., 2006).

Despite the large amount of research on compensation, the empirical results of pay-performance are mixed. For example, Frye (2001) finds that companies that grant more share-based compensation to employees perform better. Conyon and Freeman (2000) examine broad-based option plans covering employees throughout the company and reveal that the presence of option plans is associated with higher productivity. Similarly, Sesil et al. (2002) also find a significant and positive relationship between the presence of broad-based option plans and productivity, sales growth, and Tobin's Q, but no association with total shareholder returns. On the other hand, Anderson et al. (2000) estimate a simultaneous equations model linking top executives' bonuses, share option grants, and contemporaneous share returns[155]. They find a significant and positive simultaneous relationship between annual option grants and the same period share returns, and thereby conclude that the extent of top executives' incentive payments positively affects performance, and performance also positively affects the extent of top executives' incentive payments. However, the use of contemporaneous share returns makes it difficult to determine whether the option grants were rewarded for performance during the year or whether they induced superior performance. More recently, by studying 601 Chinese companies from 2000 to 2003, Buck et al. (2006) find that there are two-way causal links between executive pay and firm performance in the short run, which suggests that executive pay and firm performance mutually influence each other.

[155] Anderson et al. (2000) define "total current-period compensation to be the sum of cash compensation, the Back-Scholes value of options granted, and the value of other awards and compensation provided to the executive" (Anderson et al., 2000, p. 532). We can observe that Anderson et al. (2000) only consider the value of share options on the grant day. They do not consider any realised option gains from the executive share option holdings. They also do not include the realised and unrealised gains to the option holdings of the executive in the following years. Therefore, executive compensation they used in that research is based on the concept of flow, not the concept of a change of value.

According to prior studies, share-based compensation is positively related to subsequent firm performance. Alternatively, share-based compensation may also be granted for better performance (formulaic effects). Companies may grant more share-based compensation to align the interests of executives with those of shareholders. Moreover, according to the profit-sharing concept in Taiwan, which is mentioned in Section 8.2.1, when performance is better, Taiwanese companies will distribute more employees' bonuses, including cash and shares, to employees. Thus we hypothesise:

Hypothesis 1a: Top executives' compensation is expected to be positively associated with past firm performance.

Furthermore, according to managerial power theory (Bebchuk et al., 2002), self-interested executives may extract rents in their own favour. Since the value of an executive's share-based compensation depends upon the share price performance, self-interested executives may encourage the company to grant more share-based compensation as a substitute for cash when firm performance is good. A positive and significant relationship between share-based compensation and past firm performance should be observed. Based on these arguments, we hypothesise:

Hypothesis 1b: The ratio of top executives' share-based compensation (i.e. restricted shares and warrants) to top executives' compensation is expected to be positively associated with past firm performance.

Investment Opportunity

Companies with abundant investment opportunities have many possible investment projects for the executives to choose from. It is difficult for shareholders to solve the information asymmetry problem without having adequate knowledge and resources (Bryan et al., 2000). Smith and Watt (1992) indicate that for a company with more

investment opportunities it is more difficult for shareholders or directors to determine the appropriateness of managers' decisions because the company will operate in a less predictable and noisier environment. In this sense, granting top executives more incentive payments can lower monitoring costs. In addition to lowering monitoring costs, improving the attraction to and having retention of key employees are two other potential benefits of share-based compensation (Ittner et al., 2003). For example, in a high technology industry that requires innovative and competitive employees, it is important for companies to attract and retain highly qualified personnel by offering share-based compensation.

Many researchers hypothesise and find a positive relationship between the investment opportunities and the degree to which companies use equity incentives to tie a manager's wealth to firm value. For example, Balkin et al. (2000) find that long-term, equity-based CEO compensation is related to the level of innovations (R&D spending and the number of patents) in high technology manufacturers, but not in others. Demstez and Lehn (1985), Jensen and Meckling (1992), and Smith and Watt (1992) find that when the company is larger and more decentralised, and has more investment opportunities, the company will provide more equity-based compensation to employees. In addition, Bryan et al. (2000), Gaver and Gaver (1993), Mehran (1995), Himmelberg, Hubbard and Palia (1999), Core and Guay (2001), and Ittner et al. (2003) all confirm a positive relationship between proxy variables for investment opportunities and CEO incentive payments. Consistent with previous studies, we hypothesise:

Hypothesis 2: The ratio of top executives' share-based compensation (i.e. restricted shares and warrants) to top executives' compensation is expected to be positively associated with investment opportunities.

Board Composition

A company's board is the most important internal corporate governance mechanism

that is responsible for monitoring executives and setting executive compensation. "Boards have long been considered to play an important role in the establishment executive pay" (Finkelstein and Hambrick, 1996, p.248). Therefore, one of the main focuses influencing top executives' compensation is board composition. Typically, prior studies have evaluated the efficiency of board monitoring through the use of proxy variables, such as the ratio of outside directors. The empirical results, however, are not consistent. Lambert et al. (1993) find a positive relationship between CEO compensation and the percentage of outside directors, but Finkelstein and Hambrick (1989) find no such relationship. Mehran (1995) finds that equity-based compensation is used more extensively in firms with more outside directors. It is not surprising that the relationship between the ratio of outside directors and executive compensation is neither significantly positive nor negative because outside directors are not the main owners of the company. In Lambert et al. (1993) and Core et al. (1999), the total outside director ownership has a median far below 1%. When outside directors have little financial stake in the company, they are less likely to have any influence on executive compensation.

Nevertheless, Beatty and Zajac (1994), Rediker and Seth (1995), Sundaramurthy, Mahoney and Mahoney (1997), Coles et al. (2001), Engel et al. (2001), Core and Guay (2001), and Ittner et al. (2003) all conclude that when the governance mechanism is weak, the compensation package will be more performance-sensitive. For example, companies in the electronics industry may find it useful to have a board that has a high degree of specialized skills that can only be found in-house (i.e. inside directors). In order to compensate for the lack of internal monitoring, the company may choose to design a more performance-sensitive compensation package for executives. Conversely, companies with sound internal corporate governance can distribute fewer incentive payments to executives because the sound board of directors can monitor the executives efficiently enough. Based on this argument, the following hypotheses are established.

Hypothesis 3: The ratio of top executives' share-based compensation (i.e. restricted shares and warrants) to top executives' compensation is expected to be negatively

associated with the ratio of outside directors.

In addition to the ratio of outside directors, we also consider directors from financial institutions, such as bank representatives on the board. As in Japan (Aoki and Patrick, 1994), it is common to have one or two bank representatives on the board in Taiwan because of the borrowing and the cross-shareholding relationships. The function of these bank representatives is the same as that of the outside directors. These bank representatives can play an external monitoring role while the outside directors play an internal monitoring role. Therefore, we also hypothesise:

Hypothesis 4: The ratio of top executives' share-based compensation (i.e. restricted shares and warrants) to top executives' total compensation is expected to be negatively associated with the ratio of bank representatives on the board.

The dummy variable measuring CEO duality is also considered in prior studies. Although combining the position of CEO and chairman is currently prohibited in the UK (Cadbury Report, 1992; Combined Code, 2003[156]), it is not prohibited in Taiwan. Therefore, many Taiwanese companies combine the two positions. It is believed that serving as the CEO and the chairman on the board at the same time will hamper board independence (Harrison, Torresm and Kukalis, 1988; Wastphal and Zajac, 1994). From the viewpoint of agency theory, CEO duality has a negative influence on the monitoring ability of the board and thereby requires more share-based compensation to lower the monitoring cost (Core et al., 1999). Thus, a positive relationship between CEO duality and share-based compensation may exist.

However, an undiversified and risk-averse CEO will prefer cash instead of non-tradable restricted shares or options (Hall and Murphy, 2002). The CEO will require a high risk premium to compensate the risk. In this way, a powerful (i.e. serves as the CEO and the chairman concurrently) but undiversified CEO will use his/her power to decrease the ratio of share-based compensation in favour of an

[156] The Combined Code, Principle A.2.1: The roles of chairman and chief executive should not be exercised by the same individual. The division of responsibilities between the chairman and chief executive should be clearly established, set out in writing and agreed by the board.

increase in cash compensation. The relationship between CEO duality and the ratio of share-based compensation to total compensation will be negative. Due to the absence of data, we cannot evaluate the influence of risk-averse intention. This unknown portfolio makes the relationship between CEO duality and share-based compensation ambiguous. Regardless of whether the CEO prefers share-based compensation or cash compensation, we expect that combining the two positions "provides the CEO with a wider power base and focus of control" (Boyd, 1994, p.338). CEO total compensation is higher when the CEO is more powerful (Boyd, 1994, 1996; Core et al., 1997; Main and Johnston, 1993; Westphal and Zajac, 1995; Buck et al., 2003). Therefore, we arrive at the following hypothesis.

Hypothesis 5a: When the positions of CEO and chairman are held by the same person, top executives' compensation (the sum of base salary, share-based compensation, and options) is expected to be higher.

However, in Taiwan, the granting of warrants is less transparent to shareholders as there is no detailed disclosure rule and no formal calculation method for options. A powerful CEO may treat share-based compensation as an add-on and use share-based compensation to boost his/her own fortune. Under this inference and agency theory, the relationship between CEO duality and top executives' share-based compensation may be positive. Hence, we hypothesise,

Hypothesis 5b: The relationship between CEO duality and the ratio of top executives' share-based compensation to top executives' compensation is positive.

Ownership Structure

We now turn to the relationship between ownership structure and top executives' compensation. In addition to board composition, ownership structure is another type of proxy measurement to evaluate the efficiency of the governance mechanisms. The literature regarding the link between ownership structure and executive compensation is considerable, especially in developed countries such as the US and

the UK, for example, Core, Holthausen, and Larcker (1999), Betrand and Mullainathan (2001), Hartzell and Starks (2003) for the US; Conyon (1997), Cragg and Dyck (2003) for the UK; Kato and Kubo (2006), Kubo (2003, 2005) for Japan etc.

For shareholders, financial institutions, other companies, and blockholders all play very critical roles. Lambert et al. (1993) and Core et al. (1999) find a negative relationship between CEO compensation and the existence of an outside blockholder who owns at least 5% of the outstanding shares. Similar to the main bank system in Japan (Aoki and Patrick, 1994), in Taiwan companies usually maintain a close relationship with banks. In addition to the presence of bank representatives on the board, it is also crucial to consider financial ownership. By using the panel data of 1,914 companies on S&P 500 index from 1992 to 1997, Hartzell and Starks (2003) find institutional ownership concentration is positively associated with the pay-performance sensitivity of executive compensation, and negatively associated with the level of compensation, even after controlling for firm size, investment opportunities, and firm performance. These results indicate that the institutional investors serve a monitoring role in alleviating the agency problem between shareholders and managers. Moreover, Hartzell and Starks (2003) also find that institutional investors can influence compensation structures according to their preferences. In addition, we also focus on directors. With increasing proportions of ownership, directors will have a personal wealth incentive to monitor executives in addition to their fiduciary responsibility as members of the board of directors (Monks and Minow, 2004).

Based on the argument that governance mechanisms substitute for each other (Beatty and Zajac, 1994; Rediker and Seth, 1995; Sundaramurthy, Mahoney and Mahoney, 1997; Coles et al., 2001; Engel et al., 2001; Core and Guay, 2001; Ittner et al., 2003), shareholders from banks, financial institutions, directors, and blockholders all have a personal wealth incentive to monitor executives and thereby reduce the demand for incentive payments. For these reasons, we hypothesise:

Hypothesis 6: The ratio of top executives' share-based compensation (i.e. restricted shares and warrants) to top executives' total compensation is expected to be negatively associated with blockholder/board/cross-shareholding/financial ownership.

Among the discussions regarding ownership structure, the literature on managerial ownership is growing. Managerial ownership has been considered as one kind of alignment between the interests of executives and shareholders. Core and Guay (2002) examine the adoption of 'target ownership plans' and conclude that companies with low managerial ownership and low share price performance will be more likely to adopt the target ownership plan to alleviate the agency problem. Their finding implies that the company will use managerial ownership as one governance mechanism. Jensen and Meckling (1976) find that when CEOs hold a large fraction of their companies' equity, the demand for more share-based compensation will decrease. Smith and Watt (1992) support this argument by indicating that CEOs cannot diversify the risk associated with share-based compensation because they invest their human capital in a single position of employment. Hall and Murphy (2002) prove this argument by employing a certainty-equivalence framework to simulate CEO behaviour. Hall and Murphy (2002) find that an undiversified, risk-averse CEO will evaluate the price of an option at a lower level than the opportunity cost of issuing options to a company because these options are neither tradable nor hedgeable.

However, similar to CEO duality, high managerial ownership may give the CEO power to treat share-based compensation as add-on compensation. In empirical analysis, Mehran (1995) finds a negative relationship between CEO share-based compensation (including options and restricted shares) and managerial ownership. Moreover, regarding restricted shares compensation, Bryan et al. (2000) document a significantly negative relationship, whereas Kole (1997) finds no significantly negative relationship between managerial ownership and CEO restricted shares grants. Although some studies claim that the relationship should be negative, managerial ownership is unrelated to option compensation in other studies, such as

Yermack (1995), Matsunaga (1995), and Kole (1997). In this thesis, we still hypothesise:

Hypothesis 7: The ratio of top executives' share-based compensation (i.e. restricted shares and warrants) to top executives' total compensation is expected to be negatively associated with managerial ownership.

Cash Constraints

Share-based bonuses and warrants require no immediate cash outflow, whereas cash compensation will reduce cash and has unfavourable influences on the financial ratio (Chen, 2002). Therefore, companies with cash constraints may be more willing to distribute share-based compensation to executives as a substitute for a cash payment (Yermack, 1995; Core et al., 2003; Chen, 2002; Core and Guay, 1999, 2001). Yermack (1995), and Core and Guay (1999, 2001) confirm that cash-constrained companies grant more options to the CEO and non-executive employees. Similar to the findings of Yermack (1995) and Core and Guay (1999, 2001), we also expect that share-based compensation is used to substitute for cash in companies with cash constraints (Core and Guay, 2001). Therefore, we hypothesise:

Hypothesis 8: Companies with cash constraints will grant more shares and warrants to top executives as a substitute for cash.

Firm Size

Firm size plays a critical role on top executives' compensation. First, large companies require more capable top executives (Smith and Watts, 1992). These talented top executives will ask for higher compensation and are expected to be wealthier (Baker and Hall, 1998). Furthermore, large companies may also have a higher degree of diversification and more international branches, which means that

the information-processing demands of large companies are also higher. Henderson and Fredrickson (1996) find that CEOs are paid according to the level of information processing that their jobs require.

Second, prior research suggests that it is more difficult for a board to monitor the top executives with a great deal of information in a large company. According to agency theory, top executives who are more difficult to monitor will be granted more incentive payments to align their interests with those of shareholders. An alternative hypothesis, however, suggests that incentive compensation, especially options, will be used less in larger companies because these individual employees, especially those at a lower level, cannot affect firm performance significantly (Ittner et al., 2003).

Nevertheless, most empirical results support the hypothesis that the relationship between incentive compensation and firm size is positive. By using the natural logarithm of the number of employees, Ittner et al. (2003) find that larger companies tend to grant more share-based compensation than smaller companies. Gaver and Gaver (1993), Yermack (1995), Bryan et al. (2000), and Buck et al. (2003) all determine a positive relationship between LTIPS/option grants and firm size. These empirical results give rise to the following hypotheses:

Hypothesis 9a: Top executives' total compensation (the sum of base salary, share-based compensation, and warrants) is expected to be positively associated with firm size.

Hypothesis 9b: The ratio of top executives' share-based compensation (i.e. restricted shares and warrants) to top executives' total compensation is expected to be positively associated with firm size.

After introducing the independent variables in Section 9.3.2, Table 9-2 will match the hypotheses with the independent variables and summarise all the hypotheses that have been discussed above.

Core, Guay, and Larcker (2003) ask an important question: "Do executives and lower level employees actually understand how stock options work and the implicit incentives in these options?" (Core et al., 2003, p.43). In Taiwan, after the media spread stories of how fortunes can be made, warrants and shares have been in fashion. Since restricted shares and warrants are an "add-on" to existing compensation (Hall and Murphy, 2002), executives are less likely to contemplate the implicit incentives in adopting warrants and restricted shares. Whether the "add-on" view of share-based compensation jeopardise the alignment of the interests of executives and shareholders should be discussed in Taiwan currently.

9.3 Sample and Variable Measurement

9.3.1 Sample Selection and Data

We gathered our observations from companies listed on the Taiwan Stock Exchange Corporation (TSEC). Since granting restricted shares/warrants is a comparatively new phenomenon in Taiwan, only companies above a certain firm size pay more attention to the quality of corporate governance and the alignment between the interests of executives and those of shareholders. That is, the proxy variables concerning the granting of restricted shares/warrants would equal zero for most companies whose size are below a certain level. Therefore, it is meaningless to include all listed companies in TSEC in the empirical analysis.

According to the latest record supplied by TSEC at the beginning of 2006, there are 174 companies permitted to grant warrants to employees. We chose the observations from all 678 listed companies according to their ranking by capitalisation on 1st August, 2004 until we had a sample of 200 companies without missing data. Unfortunately, one Taiwanese company became unlisted during our research period

and was deleted from our sample.[157]. The final number of companies in the sample is, therefore, 199. We classified these companies as either GLCs or non-GLCs. There are two criteria for classification: when there are one or more directors from the government or state-owned enterprises, or the percentage of government shares to total outstanding shares exceeds 5%, the company will be classified as a GLC; otherwise the company is a non-GLC. This results in 61 GLCs and 138 non-GLCs. Table 9-1 shows the industry distribution of the observations.

From Table 9-1, it can be seen that most companies belong to the Electronics and Computer industry, especially in non-GLCs. The second largest industry for GLCs is Finance, which implies that the finance industry is one with high political intervention in Taiwan. We collected data from two databases – the Taiwan Economic Journal (TEJ)[158] and the Market Observation Post System (MOPS)[159]. The data of top executives' compensation was gathered from annual reports. The research period is from 2001 to 2004. The following sections will describe the calculation of dependent and independent variables.

[157] First International Computer, Inc. (2319) is not listed on TSEC after 30th August, 2004. There is no 2004 compensation information for First International Computer, Inc.
[158] The website of TEJ database are http://www.tei.com.tw/aboutus.html (English) and http://www.tej.com.tw (Chinese)
[159] The website of MOPS database is http://emops.tse.com.tw/emops_all.htm

Table 9-1 The industry distribution of the observations

Industry Code	Industry Classification	GLCs	non-GLCs	Total	%
11	Cement	2	1	3	1.51
12	Foods	1	1	2	1.01
13	Plastic	3	8	11	5.53
14	Textiles	1	4	5	2.51
15	Machinery	4	4	8	4.02
16	Electric Appliance and Cable	1	0	1	0.50
17	Chemicals	3	5	8	4.02
18	Glass and Ceramics	0	1	1	0.50
19	Paper	2	2	4	2.01
20	Steel and Iron	3	4	7	3.52
21	Rubber	1	4	5	2.51
22	Automobiles	0	3	3	1.51
23-24	Electronics and Computers	21	72	93	46.73
25	Construction	1	5	6	3.02
26	Transportation	3	6	9	4.52
27	Tourism	0	1	1	0.50
28	Finance	13	4	17	8.54
29	Logistics	1	3	4	2.01
98-99	Others	1	10	11	5.53
	Total	61	138	199	100

9.3.2 Independent Variable Measurement

Since the study by Jensen and Meckling (1976), the problem of managerial power and discretion has been widely analysed. Following prior research on corporate governance, we take an agency theory view to examine the issues in this thesis. The agency relationship has been described as "a contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent" (Jensen and Meckling, 1976, p. 308). Agency theory is concerned with insuring that a company's managers act in the interests of its shareholders. Agency theory asserts that companies can employ various mechanisms to align the interests of agents and principals and to monitor the behaviour of agents. Based on prior studies and the hypotheses in Section 9.2, we include variables that may affect top executives' compensation through the corporate governance mechanism. Hereunder

is the calculation of the independent variables.

Firm performance: ROE; ROA; TSR.

In line with prior literature, three variables of past firm performance are included. Similar to the work by Ittner et al. (2003), Lin (2005), and Chen (2002), return on assets (ROA) is included as one variable to measure firm performance. In this thesis, ROA is calculated by dividing a company's annual earnings by its total assets. Return on equity (ROE) is also included as an alternative measure of past firm performance (Daily et al. 1998). ROE is computed as the net income divided by the shareholder's equity. In addition to the two accounting-based variables, one market-based variable is included. Total shareholder return (TSR) can reflect share price appreciation. TSR is the total return on shares assuming dividends are reinvested.

Investment Opportunities: RD.

When there are more investment opportunities, it is more difficult for top executives to avoid making decisions in his/her own interest. Thus, the share-based compensation should be higher. Similar to the work by Gaver and Gaver (1993), Baber et al. (1996), Finkelstein and Boyd (1998), and Ittner et al. (2003), we use research and development expenditure to measure the company's investment opportunities. This variable is computed as the research and development expenditure divided by total sales (RD).

Board composition: CHAIR; OUTSIDE; BANK_D.

According to prior studies, companies may make governance choices across mechanisms, or may choose to substitute devices within mechanisms. For example, companies in the electronics industry may find it useful to have more insiders on the board because of their high degree of specialised skills. In order to compensate for the lack of external monitoring, these companies may better align compensation

packages with firm performance. Based on this argument, we include three proxy variables concerning board composition.

CEO duality is measured by a dummy variable, CHAIR, which equals 1 when the positions of chairman and CEO are held by the same person, otherwise equals 0 when these positions are held by different people (Chen, 2002). The ratio of outside directors (OUTSIDE) is calculated as the number of outside (non-executive) directors divided by the number of total directors[160]. In order to consider the governance from banks, the ratio of bank representatives (BANK_D) is included, which is calculated as the number of bank representatives divided by the number of total directors.

Ownership structure: BLOCK; BDOWN; FINOWN; CROSS; MANOWN.

Based on the argument that companies may substitute devices within mechanisms, we include five proxy variables to outline ownership structure. Similar to the work by Kang and Shivdasani (1995), the percentage of ownership accounted for by the top ten blockholders is captured in the variable BLOCK. Board ownership (BDOWN) is measured by the directors' shares divided by the total outstanding shares. Financial ownership (FINOWN) is measured by the shares owned by financial institutions, such as banks and securities companies, divided by the total outstanding shares. Cross shareholding ownership (CROSS) measures the ownership owned by other companies and is computed as the ratio of cross-shareholding shares to total outstanding shares. In this thesis, managerial ownership (MANOWN) is calculated as the shares owned by CEO and his immediate family divided by the total outstanding shares.

Cash Constraints: LEVERAGE.

[160] According to Taiwanese law there is no regulation to force companies to employ a fixed ratio of independent directors. Therefore, listed companies in Taiwan seldom employ real independent directors. If we use the strict "independent" criteria to calculate the variable OUTSIDE, most values will equal zero. We thus use the number of non-executive directors divided by the number of total directors to be OUTSIDE.

Regarding the proxy variable of cash constraints, prior studies are divergent. In some studies (e.g. Ittner et al., 2003 and Bryan et al., 2000), the ratio of long-term debt to total assets (i.e. the leverage level) is treated as external governance from debt holders. Bryan et al. (2000) explain that the incentive payments align the interests of managers and shareholders "at the expense of debtholders." Therefore, Bryan et al. (2000) hypothesise that highly leveraged companies will decrease the intensity of incentives provided by CEO share-based compensation and shift the structure of CEO compensation towards cash. However, other studies (e.g. Core and Guay, 2001; Chen, 2002) view the ratio of long-term debt to total assets as a proxy variable of cash constraints because companies that have been unable to secure long-term debt are expected to be "substantially constrained with respect to the debt markets" (Core and Guay, 2001, p.259).

Following Core and Guay (2001) and Chen (2002), in this thesis we view the leverage level as a proxy variable for cash constraints because debt holders do not have voting rights on the board, which indicates that the monitoring ability of debt holders is low. The variable LEVERAGE is calculated as the ratio of long-term debt to total assets.

Firm Size (SIZE)

There are many different variables to measure firm size, such as the natural logarithm of sales (e.g. Chen, 2002; Core and Guay, 2001), the natural logarithm of assets (e.g. Daily et al., 1998), the natural logarithm of employees (e.g. Ittner, 2003) and the natural logarithm of capitalisation (e.g. Core and Larcker, 2002). Following Daily et al. (1998), firm size (SIZE) is measured by the natural logarithm of total assets in this thesis.

Table 9-2 matches the hypotheses with the independent variables.

Table 9-2 Summary of hypotheses on top executives' compensation

The number of hypotheses is in parentheses.

		Average top executives' compensation	Top executives' incentive payment
Firm Performance	ROE	+ **(1a)**	+ **(1b)**
	ROA	+ **(1a)**	+ **(1b)**
	TSR	+ **(1a)**	+ **(1b)**
Investment Opportunities	RD	**?**	+ **(2)**
Board Composition	OUTSIDE	**?**	- **(3)**
	BANK_D	**?**	- **(4)**
	CHAIR	+ **(5a)**	+ **(5b)**
Ownership Structure	BLOCK	**?**	- **(6)**
	BDOWN	**?**	- **(6)**
	FINOWN	**?**	- **(6)**
	CROSS	**?**	- **(6)**
	MANOWN	**?**	- **(7)**
Cash Constraint	LEVERAGE	**?**	+ **(8)**
Firm Size	SIZE	+ **(9a)**	+ **(9b)**

Note: $Average\ top\ executives'\ compensation = \frac{The\ sum\ of\ all\ top\ executives'\ compensation}{The\ number\ of\ top\ executives}$

9.3.3 Measures of Top Executives' Compensation

The disclosure of CEO compensation is not sufficiently transparent in Taiwan as few relevant regulations have been established. Because of the data limitations, we use several different measures to evaluate CEO compensation, such as average top executives' compensation. We introduce the calculation of top executives' compensation in Part A, top executives' cash and share bonuses in Part B, and CEO warrants in Part C.

A. Top executives' total compensation

Kato and Kubo (2006) claim that using the average compensation of all directors and the CEO is not precise[161] because it will be significantly reduced by the inclusion of

[161] In addition to average top executives' compensation, Kato and Rockel (1992) estimate each CEO's taxable income by using individual tax returns of CEOs in 599 leading Japanese companies.

part-time directors[162]. In Japan, the CEO usually sits on the board. These part-time directors are "negligible" in the decision-making process (Kato and Kubo, 2006, p.3). Some companies only roughly disclose the total compensation of all directors[163]. According to the "Survey on Executive Compensation, Reward, and Pensions", the average compensation of part-time directors is about one quarter of the compensation of their full-time colleagues (Romu Gyosei Kenkyu Jo, 1988, p.14). Moreover, the same survey reveals that more than 80% of companies with 1,000 or more employees have part-time directors. Among these companies the average number of part-time directors in a company is 2.5.

In Taiwan, unfortunately, companies do not disclose CEO compensation separately from other top executives' compensation. Before 2004, Taiwanese companies only disclosed the sum of top executives' compensation. According to the few Taiwanese companies that disclosed CEO and top executives' compensation separately in 2004, it can be seen that the difference between CEO compensation and that of other top executives is not significant. Therefore, in this thesis we use the average top executives' compensation (ATEC) for those companies that only disclose the sum of top executives' compensation. In 2004, some Taiwanese companies started to disclose data of individual CEO compensation. For these companies we use the individual CEO compensation directly. The first variable is ATEC which can be written as follows[164]:

$$ATEC_t = Ln\{[(base\ salary)_t + (cash\ bonus)_t + (the\ number\ of\ shares)_t \times (yearly\ average\ share\ price)_t + NUM_t(BS_t) + (other\ compensation)_t]/(the\ number\ of\ top\ executives)_t\}$$

where $NUM_t(BS_t)$ = the value of warrants, which is calculated by Black-Scholes on

[162] Directors who are not executive officers receive fixed amounts of compensation according to their duties and whether they are full-time or part-time directors.

[163] The Japanese companies seldom disclose any compensation information. Although some companies disclose compensation information, they disclose it in a rough way – the sum of directors' compensation, auditors' compensation, and CEO compensation.

[164] The top executives here depend on the definition of the company. Some companies only include CEO, CFO, and COO as top executives but some companies include some other senior managers to be top executives. No matter what the definition is, CEO is always one of the top executives. We divide the sum of top executives' compensation by the number of top executives as disclosed by the company in its annual report.

the grant day[165].

ATEC is a very rough estimation of CEO compensation under the data limitations. Fortunately, although most Taiwanese companies only disclose the total value of compensation received by all top executives, some disclosed individual CEO compensation in 2004, which leads to the establishment of the other variable – the adjusted CEO compensation (W_CEO_PAY). By using the individual CEO compensation data, we compare the difference between actual CEO compensation and the average top executives' compensation (ATEC) in 2004 and then obtain the adjusted index of CEO compensation. The adjusted index of a company can be calculated as:

$$\text{The adjusted index} = \frac{X_i}{T_i/N_i} = W_i \qquad (1)$$

i: company i

X: the actual CEO compensation in company i

T: the total compensation paid to top executives in company i

N: the number of top executives whose compensation is added into the sum of compensation in company i

When W_i is greater than one, it means that actual CEO compensation is greater than the average top executives' compensation in company i and we would always expect this variable to be greater than 1.0. There are 21 companies that disclosed the individual CEO compensation in 2004. After deleting the missing data[166], we finally obtained data from 15 companies to calculate the adjusted index of CEO compensation. Equation (2) was used to sum up the 15 adjusted indices and obtain the average adjusted index.

---

[165] The calculation of values of shares and warrants will be described in the following Part B.

[166] Six companies do disclose individual CEO compensation but they do not disclose other top executives' compensation. Therefore, we cannot obtain their adjusted indices of CEO compensation. Only 15 companies disclose both individual CEO compensation and other top executives' compensation.

$$\text{The average adjusted index} = \frac{\left\{\sum_{j=1}^{k}\left[\frac{X_i}{T_i / N_i}\right]\right\}}{k} = \frac{\left\{\sum_{j=1}^{k}[W_i]\right\}}{k} \qquad (2)$$

j: 1, 2, 3,….,k

k: the total number of companies which disclose the individual CEO compensation

The average adjusted index of CEO compensation is 1.71, the maximum is 4.66 and the minimum is 1.03. Panel A in Table 9-3 shows the relationship between the number of top executives and the adjusted index of CEO compensation for every company. From Panel B in Table 9-3, we can observe that most adjusted indices of companies are located in the range 1.2-1.3.

Figure 9-1 shows a diagram of the adjusted index for every company. Based on the hypothesis that CEO compensation is much higher than other executives' compensation, we anticipate a convex line. That is, when the number of top executives increases, the average top executives' compensation (ATEC) should be lower than actual CEO compensation. However, according to Figure 9-1 the argument is not supported. The main reason may be the lack of observations, which results in outliers. If we include more observations, the line in Figure 9-1 may be more convex.

Table 9-3 The relationship between the number of executives and the adjusted index

Panel A

The number of executives whose compensation is included in the summation	W_i
2.00	1.68
2.00	1.06
3.00	1.53
4.00	1.28
4.00	1.38
4.00	1.51
5.00	1.25
5.00	1.28
5.00	1.24
6.00	1.03
6.00	1.55
9.00	4.66
10.00	2.46
12.00	1.14
13.00	2.65
AVERAGE	1.71
Max	4.66
Min	1.03

Panel B

The range of adjusted indices	The number of companies
<1	0
1-1.1	2
1.1-1.2	1
1.2-1.3	4
1.3-1.4	1
1.5-1.6	3
1.6-1.7	1
1.7-1.8	0
1.8-1.9	0
1.9-2	0
>2	3

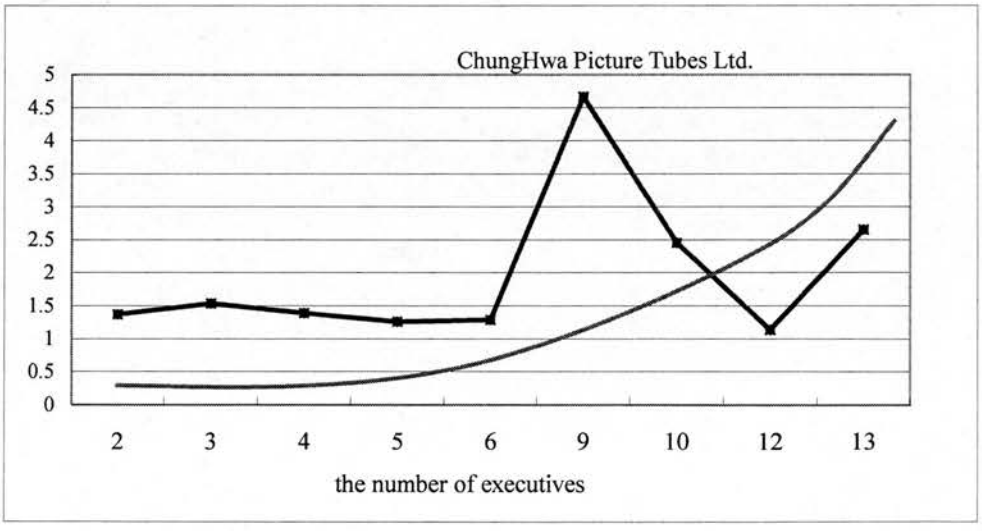


Figure 9-1 The relationship between the number of top executives and the adjusted index of CEO compensation

If we classify the companies into GLC and non-GLC groups, we find that the average adjusted index of CEO compensation is 1.26 for GLCs and 2.23 for

non-GLCs. From the indices in Table 9-4, we observe that the adjusted indices in non-GLCs are higher than those in GLCs, which implies that the CEO has a greater level of compensation in non-GLCs. Obviously, we should not use the same average adjusted index for GLCs and non-GLCs because the index for non-GLCs is much higher than that for GLCs. Therefore, in addition to the original average adjusted index (1.71), we have the GLCs adjusted index (1.26) and the non-GLCs adjusted index (2.23).

Table 9-4 The adjusted indices of CEO compensation for GLCs and non-GLCs

GLCs			
Company Name	SIC code	W_i	
Chunghwa Telecom Co. Ltd	2412	1.14	
ChangHwa Commerical Bank	2801	1.25	
Taiwan Business Bank	2834	1.03	
Taiwan Styrene Monomer Corporation	1310	1.28	
Union Bank of Taiwan	2838	1.28	
The Chinese Bank	2831	1.38	
Basso Industry Corp.	1527	1.68	
China Steel Chemical Co.	1723	1.06	
	Average	1.26	← GLC adjusted index
non-GLCs			
Company Name	SIC code	W_i	
ChungHwa Picture Tubes Ltd.	2475	4.66	
ZyXEL Communications Corporation	2391	2.65	
Taiwan Secom Co. Ltd.	9917	1.55	
Ichia Technologies Inc.	2402	1.24	
Kenda Rubber Industrial Co. Ltd.	2106	1.51	
Grand Pacific Petrochemical Corp.	1312	1.53	
Test Rite Internaional Co. Ltd.	2908	2.46	
	Average	2.23	← Non-GLC adjusted index

For those companies that do not disclose individual CEO compensation, we use the average adjusted index to adjust CEO compensation. We use the original data for companies that do disclose individual CEO compensation. As well as using the average adjusted index (index=1.71) to calculate the adjusted CEO compensation, we also use the GLCs adjusted index (index=1.26) and non-GLCs adjusted index

(index=2.23) to adjust CEO compensation. Finally, we take the natural logarithm for the adjusted compensation as the value of the variable (W_CEO_PAY). The adjusted CEO compensation for all companies, GLCs and non-GLCs, is computed as follows.

The adjusted CEO compensation for all companies

$$=\ln\left\{\frac{(\textit{The total compensation granted to top executives})_k}{1.71+1\times(N_k-1)}\times 1.71\right\} \quad (1)$$

The adjusted CEO compensation of GLCs for company i

$$=\ln\left\{\frac{(\textit{The total compensation granted to top executives})_i}{1.26+1\times(N_i-1)}\times 1.26\right\} \quad (2)$$

The adjusted CEO compensation of non-GLCs for company j

$$=\ln\left\{\frac{(\textit{The total compensation granted to top executives})_j}{2.23+1\times(N_j-1)}\times 2.23\right\} \quad (3)$$

where N is the number of top executives whose compensation is included in the total compensation. For example, in Equation (1), the weight of the CEO (weight=1.71) is different from it of other top executives (weight=1.0). The total weight is 1.71 + 1×(the number of top executives excluding CEO). Therefore, $1.71+1\times(N_k-1)$ is observed in Equation (1).

B. Top executives' cash and share bonuses

It is more meaningful to examine the structure top executives' compensation rather than the amount of top executives' compensation (Main and Johnston, 1993; Main, 2004). Therefore, in addition to the average top executives' compensation and adjusted CEO compensation, we examine top executives' cash and share bonuses in Part B and CEO warrants in Part C.

There are two kinds of employees' bonuses granted to the top executives – cash and shares. Since most companies only disclose the information of top executives'

compensation, the first measure (FVBONUS_TOTAL) is the ratio of the average top executives' cash bonuses and shares bonuses calculated by par value[167] to average top executives' compensation (ATEC). The second measure (MVBONUS_TOTAL) is the ratio of the average top executives' cash bonuses and shares bonuses calculated by market value[168] to the average top executives' compensation (ATEC).

$$FVBONUS\_TOTAL_i = \frac{cash\ bonus_i + the\ number\ of\ shares_i \times par\ value}{ATEC\ calculated\ by\ par\ value_i}$$

$$MVBONUS\_TOTAL_i = \frac{cash\ bonus_i + the\ number\ of\ shares_i \times yearly\ average\ share\ price_i}{ATEC\ calaulated\ by\ market\ value_i}$$

where

$$(ATEC)_t\ calculated\ by\ par\ value = Ln\{[(base\ salary)_t + (cash\ bonus)_t + (the\ number\ of\ shares)_t \times (par\ variable)_t + NUM_t(BS_t) + (other\ compensation)_t]/(the\ number\ of\ top\ executives)_t\}$$

$$(ATEC)_t\ calculated\ by\ market\ value = Ln\{[(base\ salary)_t + (cash\ bonus)_t + (the\ number\ of\ shares)_t \times (yearly\ average\ share\ price)_t + NUM_t(BS_t) + (other\ compensation)_t]/(the\ number\ of\ top\ executives)_t\}$$

where $NUM_t(BS_t)$ = the value of warrants which is calculated by Black-Scholes on the grant day.

C. CEO warrants

The most controversial topic in the area of compensation is the calculation of share options. Most studies use the Black-Scholes Model to calculate this. Hall and

[167] Par value is the nominal amount assigned to a security by the issuer. For an equity security, par value is usually a very small amount that bears no relationship to its market price, except for preferred stock, in which case par value is used to calculate dividend payments. The par value of a share in Taiwan is NTD10.

[168] Market value here is the yearly average share price.

Murphy (2002) claim that "restricting the trading and hedging activities of option recipients creates a divergence between the cost and value of executive stock options" (Hall and Murphy, 2002, p.5). Based on this divergence, the opportunity cost of an option to a company obviously exceeds the value of the option from the perspective of a risk-averse, undiversified executive who can neither sell the option nor hedge against its risk. Hall and Murphy (2002) use a certainty-equivalence framework to analyse the cost, value, and pay-performance sensitivity of non-tradable options, which are held by risk-averse, undiversified executives. They find that the Black-Scholes values are much higher than the real values evaluated by executives who are granted options.

The certainty-equivalence framework, however, assumes that the executive has a constant relative risk aversion ρ and a constant specific portfolio, which is split between company shares and safe cash. It is very difficult to know the risk aversion ρ and the portfolio of CEOs. Therefore, the certainty-equivalence framework is difficult to implement in the empirical analysis of this thesis. Nevertheless, it is important to recognise that the warrant value is higher than the real values evaluated by executives. In this thesis we still use the Black-Scholes Model to calculate the warrant value.

The Black and Scholes Model is:

$$C = SN(d_1) - Ke^{(-rt)}N(d_2)$$

$$d_1 = \frac{\ln(S/K) + (r + s^2/2)^t}{s\sqrt{t}}$$

$$d_2 = d_1 - s\sqrt{t}$$

C: theoretical option price

S: current stock price

t: time until option expiration

K: option striking price

r: risk-free interest rate

N: cumulative standard normal distribution

e: exponential term

ln: natural logarithm

The variable WARRANT_TOTAL is the ratio of the warrants value granted to the CEO to average top executives' compensation (ATEC).

$$WARRANT\_TOTAL_i = \frac{The\ value\ of\ warrants\ granted\ to\ the\ CEO_i}{ATEC\ calculated\ by\ market\ value_i}$$

Since the number of companies which distribute warrants is small, it is meaningless the run regressions with observations less than 30[169]. In order to run regressions, this thesis combines cash, share bonuses, and warrants to create two new variables (SHAREBASED_F and SHAREBASED_M).

$$SHAREBASED\_F_i = FVBONUS\_TOTAL_i + WARRANT\_TOTAL_i$$
$$SHAREBASED\_M_i = MVBONUS\_TOTAL_i + WARRANT\_TOTAL_i$$

Most importantly, the period of each dependent variable is different because of data limitations. Taiwanese companies only disclose the structure of top executives' compensation after 2004. Table 9-5 is a typical example of the disclosure of compensation information in the annual report in 2004. Before then it is impossible to obtain the structure of top executives' compensation. Therefore, 2004 is the only the period of FVBONUS_TOTAL, MVBONUS_TOTAL, SHAREBASED_F, and SHAREBASED_M. Similarly, the adjusted indices are not available before 2004 because no company disclosed individual CEO total compensation before then. Thus, the period of W_CEO_PAY is 2004 only. The periods of other compensation variables are from 2001 to 2004. Table 9-7 lists the period of each dependent variable.

[169] The number of left-censored data (i.e. companies which do not grant warrants) is 230 among 244 GLCs and 500 among 552 non-GLCs. That is, from 2001-2004, only 14 GLCs and 52 non-GLCs grant warrants to top executives.

Table 9-5 The disclosure of compensation information in the annual report in 2004 (Company: TSMC; SIC code: 2330)

Title	Name	Salary	Bonus	Cash	Employee Profit Sharing		Total Compenation	Warrants Granted	Other Compensation
		(NT$ thousands)	(NT$ thousands)	(NT$ Thousand)	Shares	Market Price Per Share (NT$)	(NT$ Thousand)	in 2004	(NT$ Thousand)
President & Chief Operating Officer	Rick Tsai	53,705	20,560	44,695	18,125,194	53.98	1,097,359	0	4,278
Senior Vice President Research & Development	S. Y. Chiang								
Senior Vice President Worldwide Marketing & Sales	Kenneth Kin								
Senior Vice President & Chief Information Officer	Quincy Lin								
Senior Vice President & Chief Information Officer	Stephen T. Tso								
Vice President Materials Management & Risk Management	J. B. Chen								
Vice President Research & Development	Ping Yang								
Vice President Operations I	C. C. Wei								
Vice President Operations II	Mark Liu								
Vice President Marketing	Genda Hu								
Vice President Operations I	M. C. Tzeng								
Vice President & General Counsel	Richard Thurston								
Vice President Customer Partnership and Service	Chiam Wu								
Vice President, Chief Financial Officer & Spokesperson	Lora Ho								
Vice President Human Resources	P. H. Chang								
Vice President Operations II	Wei-Jen Lo								

9.4 Regression Models

In this thesis, we examine some regressions with panel data. Considering the possibility that the company and the time may influence the dependent variables significantly, instead of using the ordinary least square (OLS), we use the fixed-effects model and the random-effects model. In addition, not all companies grant shares and warrants to CEOs every year (Yermack, 1995; Core and Guay, 1999; Bryan et al., 2000). Therefore, we test some hypotheses by using a Tobit model and a random-effects Tobit model because some dependent variables are left-censored.

One hypothesis we investigate in this thesis is, do non-GLCs align the interests of top executives and the interests of shareholders better than GLCs? In general, non-GLCs are found to be more efficient than GLCs (Mascarenhas, 1989; Agrawal and Knoeber, 2001; La Porta et al., 2002; Sun et al., 2002; Shleifer, 1998; Megginson and Netter, 2001; Schipani and Liu, 2001). In order to answer this question, we classify our observations into two groups – GLCs and non-GLCs. As before, when there are one or more directors from the government or state-owned enterprises or the percentage of government shares to total outstanding shares exceeds 5%, the company will be classified as a GLC; otherwise the company is classified as a non-GLC. Finally, there are 61 GLCs and 138 non-GLCs. We use the Chow test to compare whether there is a significant difference between these two groups. Table 9-6 shows the Chow test results. It can be seen that the null hypothesis is rejected at the 1% level for all dependent variables. That is, the difference between GLCs and non-GLCs is significant. Therefore, grouping the two kinds of companies into the same regression may not be appropriate. We will run regressions and discuss the empirical results for GLCs and non-GLCs separately in Chapter 10.

Table 9-6 The results of the Chow test

Dependent Variable	F-value	F (critical value=0.01, k, n-2k)	Result
ATEC	16.06	2.06	Reject
FVBONUS_TOTAL	11.11	2.15	Reject
MVBONUS_TOTAL	10.83	2.15	Reject
SHAREBASE_F	7.02	2.15	Reject
SHAREBASE_M	6.87	2.15	Reject

In the following we will introduce the methodologies we use to test our hypotheses.

The fixed-effects model used here is as follows:

$$Y_{it} = \alpha + \beta X_{it} + \gamma_1 W_{1t} + \gamma_2 W_{2t} + \gamma_3 W_{3t} + ... + \gamma_{N-1} W_{(N-1)t} + \delta_2 Z_{i2} + \delta_3 Z_{i3} + ... + \delta_T Z_{iT} + \varepsilon_{it} \quad (3)$$

where

W_{it} = 1 for the i[th] individual, i=1, 2,…., (N-1)

= 0 otherwise

Z_{it} = 1 for the t[th] time period, t=2, 3, 4

= 0 otherwise

$$F_{N+T-2,NT-N-T} = \frac{(ESS_1 - ESS_2)/(N+T-2)}{(ESS_2)/(NT-N-T)} \quad (4)$$

where T is number of years, which equals 3; N=61 in the GLCs group; N=138 in the non-GLCs group.

The test involves a comparison of the error sum of squares associated with the two estimation model. If the increase in the error sum of squares is not significant, we conclude that the restrictions are proper and OLS can be applied. If the error sum of squares changes substantially we opt for the fixed-effects model.

There are some problems related to the use of the fixed-effects model. The regression can be shifted by time or observations. Moreover, a considerable number of dummy variables will require a substantial number of degrees of freedom. Therefore, in addition to the fixed-effects model, we also use the more parsimonious random-effects model. The inclusion of dummy variables represents a lack of knowledge about the model. Therefore, we should observe this lack of knowledge through the error term. We thus wish to choose a pooled cross-section and time-series model in which error terms are correlated across time and observations (Pindyck and Rubinfeld, 1998). The random-effects model can achieve this objective, as follows:

$$Y_{it} = \alpha + \beta X_{it} + \varepsilon_{it} \qquad (5)$$

$$\varepsilon_{it} = u_i + v_t + w_{it} \qquad (6)$$

where $u_i \sim N(0, \sigma_u^2)$ = cross-section error component

$v_t \sim N(0, \sigma_v^2)$ = time-series error component

$w_{it} \sim N(0, \sigma_w^2)$ = combined error component

The random-effects model equation is obtained by assuming that the mean effect of the random time-series and cross-section variables is included in the intercept term. The random deviations of the mean are equal to the error components, u_i and v_t, respectively. To explain this more clearly, we can say that the error term consists of three components and has the variance as follows:

$$Var(\varepsilon_{it}) = \sigma_u^2 + \sigma_v^2 + \sigma_w^2 \qquad (7)$$

From Equation (7) it can be seen that if both σ_u^2 and σ_v^2 are equal to zero, the error term consists of a single combined disturbance. On this occasion there is no difference between applying the ordinary least-square regression (OLS) and the random-effects model. In this thesis the random-effects model is estimated as a generalised least-squares regression (GLS). The estimation weights observations

inversely to their variances. In the estimation a two-stage process is used. In the first stage, the whole pooled sample is estimated by using ordinary least squares (OLS). The OLS residuals are used to calculate sample estimates of the variance components. The second stage will use these estimated variances. In this way, GLC parameter estimates are obtained.

Statistically, the fixed-effects model can give consistent results, but it may not be the most efficient model. The random-effects model may have more efficient estimates. Therefore, after estimating parameters by running the fixed-effects model and the random-effects model, we use the Hausman test (Hausman, 1978) to observe which one is more efficient. We will use the fixed-effects model when the null hypothesis is rejected. The Hausman test statistic is computed as follows:

$$H = (\beta_{fe} - \beta_{re})' \left\{ Var[\beta_{fe}] - Var[\beta_{re}] \right\}^{-1} (\beta_{fe} - \beta_{re}) \qquad (8)$$

H_0: The fixed-effects model is appropriate. The preferred estimator is least squares with dummy variables. This is β_{fe}.

H_1: The random-effects model is appropriate. The preferred estimator is generalised least squares (GLS) with dummy variables. This is β_{re}.

Additionally, for those dependent variables with censored data, the Tobit model is used. For example, the dependent variable FVBONUS_TOTAL and MVBONUS_TOTAL, SHAREBASED_F, and SHAREBASED_M are left-censored because some top executives are not granted share-based compensation in 2004. For those top executives who do not have share-based compensation in 2004 the value of the observation is zero. Thus, in the Tobit model, the left limit will be set to zero.

To sum up, we will implement different regression models to fit different dependent variables. Table 9-7 summarises the regression models used in the analysis. The detailed regression equation will be explained with the empirical results in Chapter 10.

Table 9-7 The summary of regression models

Dependent variable	Research period	Data format	Regression method
ATEC	2001-2004	panel data	Fixed-effects model or Random-effects mode
W_CEO_PAY	2004	general data	OLS
FVBONUS_TOTAL	2004	censored data	Tobit model
MVBONUS_TOTAL	2004	censored data	Tobit model
SHAREBASED_F	2004	censored data	Tobit model
SHAREBASED_M	2004	censored data	Tobit model

9.5 Conclusion

Academic research on the topic of CEO compensation has a long history. The vast majority of research in this area has been conducted in the US and the UK (Main, 2004). While the present papers extend the literature by analysing non-executive employees' incentive payments (Core and Guay, 2001), the adoption of sub-committees (Main and Johnson, 1993; Conyon, 1997; Conyon and Peck, 1998; Peck and Ruigrok, 2002), and the value of options evaluated by executives (Hall and Murphy, 2002, 2003), relevant literature in Asia is still sparse because the disclosure of compensation information is not transparent enough. In this thesis we try to use the latest data, disclosed under the new regulations in Taiwan, to examine whether the alignment function of share-based compensation is also significant in Taiwan.

In this chapter, we build hypotheses based on prior literature. Corporate governance is generally considered to be the set of complementary mechanisms that can align the interests of managers with those of shareholders. Monitoring actions by the board of directors, debt holders, or institutional blockholders can have an important impact on firm performance (e.g. Jensen (1989); Mehran, (1995); Core, Holthausen and Larcker, (1999); Holderness, 2003). Another important and often debated component of the governance structure is the compensation contract selected for providing compensation to executives. Among the hypotheses, we not only examine the influence of corporate governance on total compensation for top executives, but also investigate the influence on share-based compensation for top executives. Similar to much of the literature regarding corporate governance, research on share-based

compensation has generated not only useful insights, but has also produced many contradictory findings. As an organising principle of this chapter, we follow a traditional agency-theory framework to build our hypotheses.

Additionally, we also introduce the sample, data, the calculation of dependent and independent variables, and the methodologies. Owing to data limitations, different methods are used to estimate top executives' (CEO) compensation. By comparing the difference between actual CEO compensation and average top executives' compensation, adjusted CEO compensation is created. Regarding the regressions, different methodologies are adopted to fit different dependent variables. In this thesis the fixed-effect model, the random-effect model, the Tobit model, and the random-effect Tobit model are used. Furthermore, according to the Chow test results, observations are also classified as GLCs or non-GLCs. In the following chapter, GLCs and non-GLCs will be examined separately to observe whether these two groups possess different characteristics on corporate governance mechanisms and compensation packages. Chapter 10 discusses the empirical results of top executives' compensation in Taiwan.

Chapter Ten
Empirical Results of Top Executives' Compensation in Taiwan

10.1 Introduction

The review of the institutional background of top executives' compensation in Taiwan is presented in Chapter 8. From Chapter 8, we can conclude that the relevant laws in Taiwan, which regulate the calculation and disclosure of CEO compensation, are not nearly as complete compared to those in the US and the UK. Fortunately, the authorities in Taiwan have recently started to reform corporate governance. Many laws have been established in the last few years. These new laws improve the level of disclosure and the transparency of compensation. Based on the latest data and prior literature, Chapter 9 builds the hypotheses that highlight the relationship between top executives' compensation and corporate governance mechanisms. In addition, Chapter 9 introduces the variables and describes their construction.

In this Chapter, we describe the descriptive statistics in Section 10.2.1. In Section 10.2.2, we discuss the empirical results of the analysis of top executives' compensation in GLCs and non-GLCs and make a comparison with prior studies. Finally, we draw our conclusions in Section 10.3.

10.2 Empirical Results

10.2.1 Descriptive Statistics

Before discussing the regression models in Sections 10.2.2 and 10.2.3, we first discuss the descriptive statistics for variables in GLCs and non-GLCs. Table 10-1 presents the descriptive statistics for total observations, GLCs, and non-GLCs. The

mean of average top executives' compensation (ATEC) is 15.38 lnNTD[170] in GLCs (Panel B, Table 10-1) and 15.30 lnNTD in non-GLCs (Panel C, Table 10-1). By comparing the three tables it can be seen that although average top executives' compensation (ATEC) in non-GLCs is lower than that in GLCs, the ratio of top executives' share-based compensation to top executives' compensation (FVBONUS_TOTAL, MVBONUS_TOTAL, and WARRANT_TOTAL) are all higher in non-GLCs than in GLCs. Given this, we can conclude that non-GLCs in Taiwan are more willing to grant share-based compensation to top executives and than GLCs. The compensation structure of top executives in GLCs is based mainly on base salary rather than share-based incentive payments. According to agency theory, these statistics also indicate that the interests of top executives in non-GLCs are aligned to those of shareholders more significantly than in GLCs. However, given the phenomenon of family control in Taiwan and the higher ratio of CEO duality in non-GLCs, increasing the ratio of share-based compensation may merely be a method of increasing top executives' benefits (Hall and Murphy, 2002, 2003).

For other variables, the mean of the ratio of research and development expenses to total sales (RD) is 2.38% for non-GLCs, which is higher than that in GLCs. In board composition, the CEOs of non-GLCs are more likely to occupy the chairman position and the boards have a lower ratio of outside directors and bank representatives, which indicates that the CEOs in non-GLCs may be more influential and less monitored than those in GLCs. Meanwhile, the mean of board ownership (BDOWN) is 11.60% in non-GLCs, which is higher than that in GLCs. Furthermore, firm size of GLCs is bigger than that of non-GLCs, and it may just be that the government is more likely to appoint directors to large companies.

[170] 1 USD ≅ 32.78 NTD; 1 GBP ≅ 62.65

Table 10-1 The descriptive statistics on top executives' compensation

A. All observations

		N	Period	Min	Max	Mean	Std.
CEO Conpensation	AVE_CEO_PAY	796	2001-2004	12.61	19.15	15.33	0.71
	W_CEO_PAY	199 (note 1)	2004	13.15	18.47	15.55	0.85
	FVBONUS_TOTAL	199	2004	0.00	84.14	15.16	20.62
	MVBONUS_TOTAL	199	2004	0.00	98.26	22.09	30.04
	WARRANT_TOTAL	796	2001-2004	0.00	97.79	4.28	16.10
Performance	ROE	796	2001-2004	-141.08	67.78	8.90	15.89
	ROA	796	2001-2004	-54.32	50.64	6.45	8.79
	TSR	796	2001-2004	-85.84	659.51	28.37	73.79
Investment Opportunities	RD	796	2001-2004	0.00	44.60	2.16	4.22
Board Composition	CHAIR	796	2001-2004	0.00	1.00	0.20	24.46
	OUTSIDE	796	2001-2004	0.00	100.00	41.95	11.90
	BANK_D	796	2001-2004	0.00	81.82	5.85	0.40
Ownership Structure	BLOCK	796	2001-2004	5.03	95.32	37.15	16.43
	BDOWN	796	2001-2004	0.00	70.61	9.41	10.86
	FINOWN	796	2001-2004	0.00	55.88	3.84	6.36
	CROSS	796	2001-2004	0.01	79.92	23.99	18.72
	MANOWN	796	2001-2004	0.00	8.37	0.43	1.03
Cash Constraints	LEVERAGE	796	2001-2004	0.00	86.17	24.25	16.25
Firm Size	SIZE	796	2001-2004	21.16	28.61	23.89	1.33

B. GLCs

		N	Period	Min	Max	Mean	Std.
CEO Conpensation	AVE_CEO_PAY	244	2001-2004	13.31	19.15	15.38	0.73
	W_CEO_PAY (1.71)	61 (note 1)	2004	13.44	18.47	15.52	0.90
	W_CEO_PAY (1.26)	61	2004	13.27	18.20	15.31	0.87
	FVBONUS_TOTAL	61	2004	0.00	78.01	12.60	21.16
	MVBONUS_TOTAL	61	2004	0.00	98.26	17.17	29.65
	WARRANT_TOTAL	244	2001-2004	0.00	97.79	2.92	13.10
Performance	ROE	244	2001-2004	-141.08	34.50	4.82	17.32
	ROA	244	2001-2004	-54.32	24.05	3.73	8.35
	TSR	244	2001-2004	-85.84	643.33	21.06	58.42
Investment Opportunities	RD	244	2001-2004	0.00	32.02	1.65	3.77
Board Composition	CHAIR	244	2001-2004	0.00	1.00	0.13	0.34
	OUTSIDE	244	2001-2004	0.00	100.00	48.89	26.31
	BANK_D	244	2001-2004	0.00	81.82	10.94	16.66
Ownership Structure	BLOCK	244	2001-2004	6.16	95.32	38.26	17.24
	BDOWN	244	2001-2004	0.00	47.54	4.47	6.84
	FINOWN	244	2001-2004	0.00	55.88	4.88	9.10
	CROSS	244	2001-2004	0.01	79.81	22.50	18.11
	MANOWN	244	2001-2004	0.00	8.37	0.41	1.12
Cash Constraints	LEVERAGE	244	2001-2004	0.00	86.17	23.86	16.51
Firm Size	SIZE	244	2001-2004	21.55	28.61	24.58	1.46

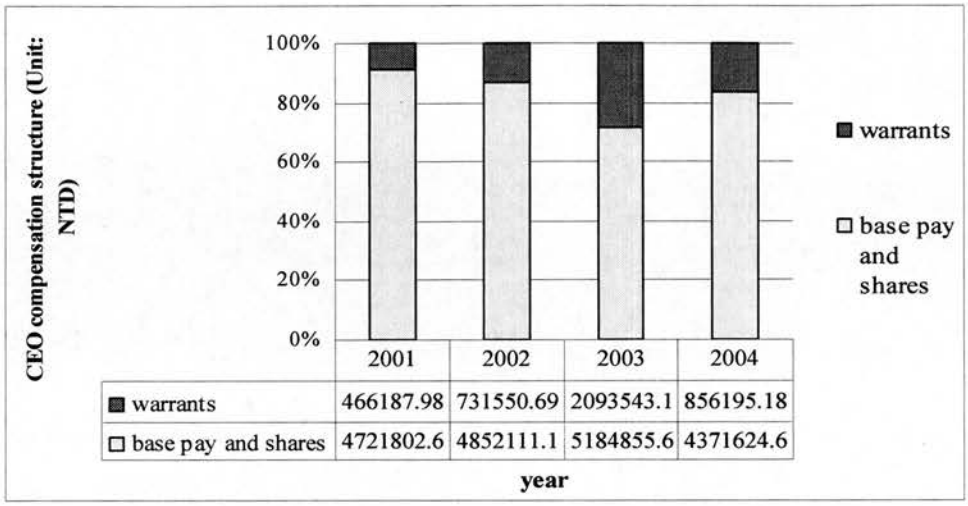
C. Non-GLCs

		N	Period	Min	Max	Mean	Std.
CEO Conpensation	AVE_CEO_PAY	552	2001-2004	12.61	18.37	15.30	0.70
	W_CEO_PAY (1.71)	138 (note 1)	2004	13.15	18.29	15.56	0.83
	W_CEO_PAY (2.23)	138	2004	13.25	18.31	15.74	0.84
	FVBONUS_TOTAL	138	2004	0.00	84.14	16.30	20.36
	MVBONUS_TOTAL	138	2004	0.00	95.02	24.26	30.05
	WARRANT_TOTAL	552	2001-2004	0.00	92.21	4.88	17.24
Performance	ROE	552	2001-2004	-90.35	67.78	10.70	14.88
	ROA	552	2001-2004	-30.21	50.64	7.66	8.73
	TSR	552	2001-2004	-76.37	659.51	31.60	79.48
Investment Opportunities	RD	552	2001-2004	0.00	44.60	2.38	4.39
Board Composition	CHAIR	552	2001-2004	0.00	1.00	0.24	0.43
	OUTSIDE	552	2001-2004	0.00	100.00	38.89	22.97
	BANK_D	552	2001-2004	0.00	60.00	3.60	8.08
Ownership Structure	BLOCK	552	2001-2004	5.03	89.25	36.66	16.05
	BDOWN	552	2001-2004	0.00	70.61	11.60	11.57
	FINOWN	552	2001-2004	0.00	31.75	3.37	4.59
	CROSS	552	2001-2004	0.53	79.92	24.66	18.96
	MANOWN	552	2001-2004	0.00	7.67	0.44	0.99
Cash Constraints	LEVERAGE	552	2001-2004	0.00	77.05	24.43	16.14
Firm Size	SIZE	552	2001-2004	21.16	28.05	23.59	1.14

Note 1: Due to data limitations, the time period for some variables (W_CEO_PAY, FVBONUS_TOTAL, and MVBONUS_TOTAL) is 2004 only. Hence, the number of companies for these variables is one-fourth of the number of companies for the variable ATEC.

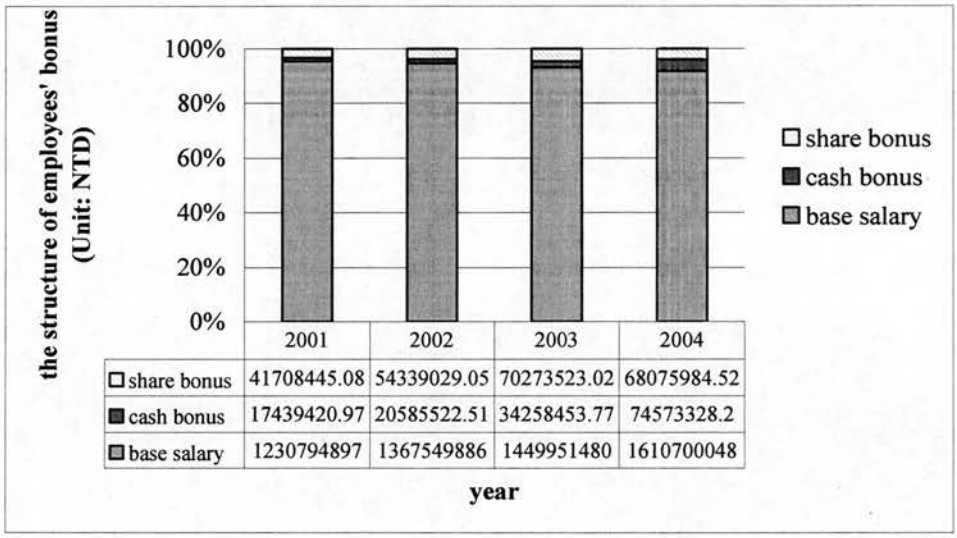
In addition to the statistics in Table 10-1, Figure 10-1 shows the compensation structure of top executives and non-executive employees. In Figure 10-1 (A), from 2001 to 2003, the average value of base salary and shares for top executives' increases from NTD 4,721,802.59 (around USD 143,258.57) to NTD 5,184,855.61 (around USD 157,307.51), whereas the value of warrants granted to CEOs increases from NTD 466,187.98 (around USD 14,144.05) to 2,093,543.07 (around USD 63,517.69). The increasing rate of the value of CEO warrants is 36 times more than the increasing rate of the average value of base salary and shares for top executives'. In order to compare, the structure of the non-executive employees' compensation is drawn in Figure 10-1 (B). Comparing Figure 10-1 (A) with Figure 10-1 (B), it can be seen that Taiwanese companies grant a higher ratio of incentive payments to top executives than to non-executive employees. From Table 10-1 and Figure 10-1, we can conclude that the interests of top executives rather than those of employees are better aligned with the interests of shareholders from the viewpoint of agency theory.

A. The structure of average top executives' compensation (ATEC)



	2001	2002	2003	2004
warrants	466187.98	731550.69	2093543.1	856195.18
base pay and shares	4721802.6	4852111.1	5184855.6	4371624.6

B. The structure of employees' compensation



	2001	2002	2003	2004
share bonus	41708445.08	54339029.05	70273523.02	68075984.52
cash bonus	17439420.97	20585522.51	34258453.77	74573328.2
base salary	1230794897	1367549886	1449951480	1610700048

Note: Taiwanese companies seldom disclosed top executives' base pay, cash bonuses, and share bonuses separately before 2004. Therefore, we only obtain the value of base pay, cash bonuses, and share bonuses in Part (A).

Figure 10-1 The structure of top executives' and non-executive employees' compensation in Taiwan, 2001-2004: All observations

10.2.2 Empirical Results of Top Executives' Compensation

In this section, we discuss the empirical results of the relationship between top executives' compensation and the corporate governance mechanism in GLCs and non-GLCs. In order to explain and compare these results methodically, first, in Part A

we examine the results of the relationship between top executives' compensation and corporate governance mechanisms. The relationship between top executives' incentive payments and the corporate governance mechanisms are investigated in Part B.

A. Top executives' compensation and corporate governance mechanisms

In the area of top executives' compensation, four kinds of variables are examined: average top executives' compensation (ATEC) and three adjusted CEO compensation variables (W_CEO_PAY) with different adjusted indices[171]. For top executives' compensation, the empirical model is[172]:

$$\begin{aligned}(\textit{Top executives' compensation})_{i,t} = {} & \alpha_0 + \alpha_1 ROE_{i,t-1} + \alpha_2 ROA_{i,t-1} + \alpha_3 TSR_{i,t-1} + \alpha_4 RD_{i,t-1} + \\ & \alpha_5 CHAIR_{i,t-1} + \alpha_6 OUTSIDE_{i,t-1} + \alpha_7 BANK\_D_{i,t-1} + \\ & \alpha_8 BLOCK_{i,t-1} + \alpha_9 BDOWN_{i,t-1} + \alpha_{10} FINOWN_{i,t-1} + \\ & \alpha_{11} CROSS_{i,t-1} + \alpha_{12} MANOWN_{i,t-1} + \alpha_{13} LEVERAGE_{i,t-1} + \\ & \alpha_{14} SIZE_{i,t-1} + \varepsilon_{i,t}\end{aligned}$$

Since the variable ATEC uses panel data, both a fixed-effects model and a random-effects model are possible. We use the Hausman test to determine which one is more appropriate. Table 10-2 presents the Hausman test results. According to the chi-square statistic (39.45 for GLCs and 22.44 for non-GLCs), we reject the null hypothesis that there is no difference between a fixed-effects model and a random-effects model at the 10% level for GLCs and non-GLCs when the dependent variable is ATEC. Therefore, we will use the fixed-effects model in the following to estimate parameters for the dependent variable, ATEC.

---

[171] In Section 9.3.3, we explain that using the same adjusted index for GLCs and non-GLCs is not appropriate because the adjusted index for non-GLCs is much higher than for GLCs. Therefore, in empirical analysis, we use the general adjusted index (1.71), the GLCs adjusted index (1.26), and the non-GLCs adjusted index (2.23) to run regressions.

[172] ROE: computed as the net income divided by the shareholder's equity. ROA: calculated by dividing a company's annual earnings by its total assets. TSR: the total return on shares assuming dividends are reinvested. RD: the ratio of R&D expense to total sales. CHAIR: a dummy variable which measures CEO duality. OUTSIDE: the percentage of outside directors. BANK_D: the ratio of the number of bank representatives on the board to the total number of directors. BLOCK: the percentage of blockholder ownership. BDOWN: the percentage of board ownership. FINOWN: the ratio of financial institutions shares to total outstanding shares. CROSS: the ratio of institutional shares to total outstanding shares. MANOWN: the percentage of managerial ownership. LEVERAGE: the ratio of long-term debt to total assets. SIZE: the natural logarithm of total assets.

Table 10-2 Hausman test for the dependent variable ATEC

	GLCs			Non-GLCs		
Variable	Fixed-Effects	Random-Effects	Difference	Fixed-Effects	Random-Effects	Difference
ROE	-0.002	-0.001	-0.002	-0.003	-0.001	-0.001
ROA	0.008	0.017	-0.009	0.016	0.019	-0.003
TSR	0.000	0.000	0.000	0.000	0.000	0.000
RD	-0.039	0.028	-0.067	-0.005	0.009	-0.014
CHAIR	0.012	0.205	-0.193	0.054	0.079	-0.025
OUTSIDE	-0.004	-0.004	0.000	0.001	0.001	0.001
BANK_D	-0.005	-0.003	-0.002	-0.005	-0.003	-0.001
BLOCK	0.005	-0.001	0.006	-0.008	-0.001	-0.006
BDOWN	0.008	0.012	-0.004	-0.006	-0.005	-0.001
FINOWN	0.016	0.000	0.016	-0.008	-0.001	-0.006
CROSS	-0.004	-0.004	-0.001	-0.003	-0.003	0.000
MANOWN	0.100	0.061	0.039	0.044	0.029	0.015
LEVERAGE	-0.007	-0.005	-0.002	0.001	0.001	0.000
SIZE	0.196	0.108	0.088	0.255	0.176	0.080
Chi-square statistic	39.45 (0.000)***			22.44 (0.070)*		

Dependent variable: ATEC

*p<0.1 **p<0.05 ***p<0.01

Table 10-3 presents the empirical results for GLCs and non-GLCs for the dependent variable ATEC. According to Hypothesis 1a, average top executives' compensation is expected to be positively associated with firm performance. Surprisingly, all of the proxy variables of firm performance are insignificant for GLCs whereas only ROA is positive and significant at the 10% level for non-GLCs. However, in both GLCs and nom-GLCs, the null hypothesis that the coefficients of three performance variables (ROE, ROA, and TSR) equal zero concurrently cannot be rejected by using the F test. Meanwhile, in line with Hypothesis 9a, average top executives' compensation is positively associated with firm size (SIZE) in GLCs and non-GLCs. In a meta analysis of CEO compensation studies, Tosi et al. (2000) claim that firm size accounts for 40% compensation variance, whereas firm performance only accounts for 5%. Using the rough variable ATEC, our result, which shows that firm size rather than firm performance is significant in GLCs and non-GLCs, supports the work of Tosi et al. (2000).

For board composition, OUTSIDE is negative and significant at the 5% level in

GLCs, which means that companies pay less top executives' compensation when the ratio of outside directors on the board is higher. However, the situation in non-GLCs is different. There, the relationship between outside directors and average top executives' compensation (ATEC) is not significant, whereas the relationship between the ratio of shares owned by blockholders to total outstanding shares (BLOCK) and ATEC is negative and significant in non-GLCs. The negative relationship between ATEC and BLOCK indicates that the blockholders will reduce top executives' compensation. However, the negative relationship between BLOCK and ATEC contradicts the result in the work by Lin (2005), which finds no significant relationship between blockholder ownership and CEO compensation.

Table 10-3 The regression results of the fixed-effects model for CEO total compensation (ATEC)

Dependent variable: ATEC, the natural logarithm of average top executives' compensation

	GLCs			Non-GLCs		
Variable	beta	t-value	significance	beta	t-value	significance
constant	10.802	3.820	0.000***	9.584	4.740	0.000***
ROE	-0.002	-0.440	0.660	-0.003	-0.600	0.548
ROA	0.008	0.760	0.449	0.016	1.770	0.077*
TSR	0.000	0.230	0.821	0.000	-0.340	0.735
RD	-0.039	-1.500	0.135	-0.005	-0.440	0.657
CHAIR	0.012	0.060	0.950	0.054	0.490	0.623
OUTSIDE	-0.004	-1.980	0.049**	0.001	0.750	0.451
BANK_D	-0.005	-0.830	0.406	-0.005	-1.120	0.261
BLOCK	0.005	0.830	0.407	-0.008	-1.650	0.100*
BDOWN	0.008	0.580	0.560	-0.006	-1.180	0.239
FINOWN	0.016	1.140	0.257	-0.008	-1.130	0.257
CROSS	-0.004	-0.870	0.385	-0.003	-0.870	0.383
MANOWN	0.100	0.970	0.332	0.044	1.320	0.187
LEVERAGE	-0.007	-1.260	0.211	0.001	0.250	0.806
SIZE	0.196	1.660	0.099*	0.255	2.980	0.003***
Observations	244			552		
Companies	61			138		
Adjusted R square	0.591			0.589		
F test for performance	0.250 (0.863)			1.910 (0.128)		
F test	3.730 (0.000) ***			5.610 (0.000) ***		

*p<0.1 **p<0.05 ***p<0.01

Although the empirical results above reveal the relationship between average top executives' total compensation (ATEC) and other variables, the dependent variable

ATEC is less than ideal. ATEC is obtained by dividing the sum of top executives' compensation by the number of top executives. The possibility of underestimating CEO compensation is higher when the number of top executives is larger because it will be diluted by other executives' compensation. After multiplying an adjusted index on average top executives' compensation, the new variable W_CEO_PAY should be closer to the actual CEO total compensation[173]. We first use 1.71 as the adjusted index for both GLCs and non-GLCs. Afterwards, we use 1.26 for GLCs and 2.23 for non-GLCs as adjusted indices[174].

Table 10-4 displays the empirical results. Similar to the previous results in Table 10-3, in Table 10-4 the ratio of outside directors (OUTSIDE) in GLCs is negatively related to adjusted CEO total compensation (adjusted indices are 1.71 and 1.26). Firm size (SIZE) is also positively associated with adjusted CEO total compensation (adjusted indices are 1.71 and 1.26). However, we are more concerned with addressing dissimilarities. After multiplying the adjusted indices (1.71 and 1.26) by average top executives' compensation (ATEC), return on assets (ROA) and CEO duality (CHAIR) have a positive and significant influence on W_CEO_PAY. This finding is consistent with Hypothesis 1a, which states that average top executives' compensation is positively related to past firm performance. Furthermore, when the positions of CEO and chairman are held by the same person, W_CEO_PAY will increase by 94.84 percentage points (adjusted index = 1.71) or 91.17 percentage points (adjusted index = 1.26)[175]. This indicates that the expansion of CEO power will affect CEO compensation significantly in GLCs.

In non-GLCs, compared with the empirical results obtained by using ATEC as the dependent variable in Table 10-3, the empirical results in Table 10-4, which use adjusted CEO compensation (W_CEO_PAY, adjusted = 1.71 or 2.23) are similar. ROA is significant and positive for non-GLCs, which means that the alignment

---

[173] Please refer to Section 9.3.3 for the calculation of W_CEO_PAY.

[174] For the calculation of adjusted indices, please refer to Section 9.3.3.

[175] Given the natural logarithmic of the dependent variable, the marginal impact of CHAIR on W_CEO_PAY can be obtained by taking the exponential of the coefficient 0.667 and 0.648. Hence, we find that the combined position of CEO and chairman will increase CEO compensation 94.84 percentage points or 91.17 percentage points.

between performance and compensation is more significant when using W_CEO_PAY. ROE and TSR, however, are not significant in Table 10-4. In addition, managerial ownership (MANOWN) is positively associated with W_CEO_PAY (adjusted index = 1.71) and W_CEO_PAY (adjusted index = 2.23). However, here we can only conclude that the adjusted CEO total compensation in non-GLCs is positively associated with managerial ownership. The following regressions will examine whether the structure of top executives' compensation changes with managerial ownership.

Table 10-4 OLS Regression results for adjusted CEO compensation (W_CEO_PAY)

Dependent variable: W_CEO_PAY, the natural logarithm of adjusted CEO compensation. There are two different adjusted indices for GLCs and non-GLCs. For GLCs, the two adjusted indices are 1.71 and 1.26, and for non-GLCs they are 1.71 and 2.23. For the calculation of adjusted indices, please refer to Section 9.3.3.

	GLCs		Non-GLCs	
	W_CEO_PAY(1.71)	W_CEO_PAY(1.26)	W_CEO_PAY(1.71)	W_CEO_PAY(2.23)
Variable	beta (significance)	beta (significance)	beta (significance)	beta (significance)
constant	11.609 (0.000)***	11.482 (0.000)***	5.339 (0.005)***	5.433 (0.003)***
ROE	-0.011 (0.472)	-0.014 (0.357)	-0.007 (0.357)	-0.007 (0.347)
ROA	0.064 (0.052)*	0.068 (0.033)**	0.029 (0.048)**	0.028 (0.056)*
TSR	-0.004 (0.464)	-0.004 (0.518)	0.001 (0.864)	0.001 (0.868)
RD	0.001 (0.997)	0.005 (0.923)	-0.033 (0.124)	-0.034 (0.107)
CHAIR	0.667 (0.037)**	0.648 (0.038)**	-0.050 (0.731)	-0.073 (0.616)
OUTSIDE	-0.012 (0.051)*	-0.012 (0.046)**	-0.004 (0.187)	-0.004 (0.171)
BANK_D	0.001 (0.876)	0.001 (0.883)	0.008 (0.341)	0.008 (0.347)
BLOCK	-0.008 (0.229)	-0.008 (0.244)	0.002 (0.603)	0.002 (0.619)
BDOWN	0.007 (0.776)	0.007 (0.766)	0.003 (0.766)	0.004 (0.706)
FINOWN	-0.022 (0.108)	-0.022 (0.106)	-0.003 (0.751)	-0.004 (0.713)
CROSS	-0.002 (0.799)	-0.002 (0.804)	0.001 (0.909)	0.001 (0.915)
MANOWN	-0.041 (0.673)	-0.040 (0.674)	0.143 (0.029)**	0.153 (0.019)**
LEVERAGE	-0.007 (0.253)	-0.007 (0.289)	-0.007 (0.104)	-0.008 (0.090)*
SIZE	0.183 (0.058)*	0.176 (0.062)*	0.387 (0.000)***	0.391 (0.000)***
Industry Dummy	Yes	Yes	Yes	Yes
Observations	61	61	138	138
Adjusted R square	0.480	0.477	0.415	0.424
F test for performance	5.730 (0.003)***	5.950 (0.003)***	2.530 (0.061)*	2.270 (0.085)*
F test	2.909 (0.002)***	2.884 (0.002)***	4.134 (0.000)***	4.248 (0.001)***

*p<0.1 **p<0.05 ***p<0.01

Prior studies reveal that there are many societal similarities between Japan, Korea, China, and Taiwan, such as political involvement in and family control of companies

(Claessens et al., 2000). By studying 918 Chinese companies in 1998-2002, Kato and Long (2004) find that, "cash compensation of Chinese executives is significantly affected by firm accounting performance as well as stock market performance" (Kato and Long, 2004, p.23). Buck et al. (2005) and Fung et al. (2002) also report a significant influence of performance on executive pay in China[176]. For Japan, Kaplan (1994) indicates that Japanese executive compensation is related to earnings, share returns, and sales performance. Kato and Kubo (2006) also find that Japanese CEO cash compensation is sensitive to firm performance, especially accounting measures. Moreover, Kato, Kim, and Lee (2004) state that cash compensation of Korean executives is positively related to share market performance. We find that CEO total compensation in Taiwan is related to the accounting measures (ROA and ROE), but not to the share market measure (TSR). This finding is similar to the result found by Kato and Kubo (2006), but different from those found by Kato, Kim, and Lee (2004). Moreover, after separating GLCs and non-GLCs, we can observe that the focus of the monitoring mechanisms is different in GLCs and non-GLCs. In GLCs, outside directors play the monitoring role whereas in non-GLCs, blockholders play this role.

B. Top executives' share-based compensation and corporate governance mechanisms

In this part, the relationship between top executives' share-based compensation and corporate governance mechanisms are examined. Although the board of directors, financial institutions, and other cross-shareholding companies are associated with the level of CEO compensation, prior studies pay more attention to the structure of CEO compensation (e.g. Mehran, 1995; Bryan et al., 2000). Since top executives in Taiwan do not receive shares and warrants every year, the data of dependent variables are left-censored. Therefore, we use the Tobit model and the random-effects Tobit model in this part to run the regressions. The empirical model is:

[176] Buck et al. (2005) also report a reverse causation running from pay to performance. This thesis, however, does not discuss this dimension. Based on the viewpoint of agency theory, the alignment between pay and subsequent performance is examined by many local studies in Taiwan, such as Hsu (2003) and Yao (1997).

$$(Top\ executives'\ share-based\ compensation)_{i,t} = \alpha_0 + \alpha_1 ROE_{i,t-1} + \alpha_2 ROA_{i,t-1} + \alpha_3 TSR_{i,t-1} + \alpha_4 RD_{i,t-1} + \alpha_5 CHAIR_{i,t-1} + \alpha_6 OUTSIDE_{i,t-1} + \alpha_7 BANK\_D_{i,t-1} + \alpha_8 BLOCK_{i,t-1} + \alpha_9 BDOWN_{i,t-1} + \alpha_{10} FINOWN_{i,t-1} + \alpha_{11} CROSS_{i,t-1} + \alpha_{12} MANOWN_{i,t-1} + \alpha_{13} LEVERAGE_{i,t-1} + \alpha_{14} SIZE_{i,t-1} + \varepsilon_{i,t}$$

There are four different variables used to measure top executives' shares compensation – FVBONUS_TOTAL, MVBONUS_TOTAL, SHAREBASED_F, and SHAREBASED_M. Because of data limitations, the period of these variables is 2004 only. Table 10-5 presents the empirical results of share compensation in GLCs and non-GLCs.

Table 10-5 shows the Tobit regression results of the relationship between top executives' shares compensation and the hypothesised determinants. The results for GLCs shown in Columns (1), (2), (3), and (4) in Table 10-5 are not very different. According to the coefficients in columns 1 and 2, it can also be seen that ROE has a positive influence on top executives' shares compensation. When ROE increases a one-percentage point, FVBONUS_TOTAL will increase 1.677 percentage points, and MVBONUS_TOTAL will increase 2.230 percentage points. Hypothesis 1b is supported.

The significant and negative relationship between BANK_D and BLOCK and the ratio of top executives' shares compensation implies the monitoring role played by bank representatives and blockholders, and suggests the substitution between various corporate governance mechanisms (Beatty and Zajac, 1994; Rediker and Seth, 1995; and Sundaramurthy, Mahoney and Mahoney, 1997; Coles et al., 2001; Engel et al., 2001; Core and Guay, 2001; and Ittner et al., 2003). The negative relationship between BLOCK and the ratio of top executives' share compensation to top executives' compensation (FVBONUS_TOTAL and MVBONUS_TOTAL) is consistent with prior studies, such as that by Ittner et al. (2003) who find a significant coefficient of -0.510 (our coefficients are -0.406 and -0.541)[177]. The relationship between OUTSIDE and FVBONUS_TOTAL is also negative and significant at the

[177] The dependent variable in Ittner et al. (2003) is the ratio of equity-based compensation to vice president's total compensation rather than to CEO total compensation. If the dependent variable is the ratio of equity-based compensation to CEO total compensation, the coefficient is not significant.

10% level, which again demonstrates the monitoring roles of outside directors[178]. Hypotheses 3, 4, and 6 are supported. These results for GLCs also support the argument in the work by Coles (2001), which demonstrates that companies may substitute governance choices across mechanisms. For example, in order to compensate for this lack of external monitoring, the firm may choose to design performance-sensitive compensation packages and vice verse.

Furthermore, the significant and positive relationship between firm size (SIZE) and the ratio of CEO shares compensation is also consistent with Hypothesis 9b and many prior studies (e.g. Baker and Hall, 1998; Himmelberg et al., 1999; Ittner et al., 2003). The results in Columns (1) and (2) of Table 10-5 also demonstrate a significant and negative relationship between managerial ownership (MANOWN) and FVBONUS_TOTAL. According to the risk-aversion hypothesis in Hypothesis 7, when top executives hold a large fraction of their companies' equity, the demand for more share-based compensation will decrease because they cannot diversify the risk associated with share-based compensation (Smith and Watt, 1992; Hall and Murphy, 2002, 2003). Our empirical results for GLCs support this argument.

While the results of GLCs are consistent with our hypotheses and prior studies, the results of non-GLCs are less so. We still obtain a positive and significant relationship between one accounting measure, ROA, and top executives' shares compensation. When ROA increases a one-percentage point, FVBONUS_TOTAL will increase 1.024 percentage points, and MVBONUS_TOTAL will increase 1.539 percentage points. This finding is consistent with Hypothesis 1b. However, the relationship between TSR and the ratio of CEO shares compensation is significant but negative, which contradicts Hypothesis 1b. This finding implies that companies are more likely to grant shares to CEOs when the share price does not perform well.

However, the variables for governance, such as OUTSIDE and BLOCK, are not significantly related to top executives' shares compensation in non-GLCs. This result is consistent with the argument that governance mechanisms in non-GLCs cannot

[178] The relationship between OUTSIDE and ATEC (W_CEO_PAY) in GLCs is also negative and significant at the 5% (1%) level in Tables 10-3 and 10-4.

substitute the monitoring mechanism that uses top executives' shares compensation to prevent the top executives from pursuing his/her own interests. Second, this result also supports the supposition that external and internal governance in non-GLCs may not be efficient enough to withstand the top executives' power to gain more compensation. If internal and external governance in non-GLCs cannot affect top executives' shares compensation significantly, the question becomes "What can affect top executives' shares compensation in non-GLCs?" From Table 10-5, a significant and positive relationship between FVBONUS_TOTAL and managerial ownership (MANOWN) can be observed. The relationship between MVBONUS_TOTAL and MANOWN is also positive. According to prior studies (e.g. Jensen and Meckling, 1976; Hall and Murphy, 2003) and the risk-aversion assumption, when CEOs hold a large fraction of their companies' equity, the demand for more share-based compensation will decrease. Smith and Watt (1992) also support this argument by indicating that CEOs cannot diversify the risk associated with share-based compensation because they invest their human capital in a single position of employment. Surprisingly, the empirical result in Taiwan contradicts this argument.

This contradiction has several possible explanations. First, although it is common to grant restricted shares and options to CEOs and non-executive employees in some developed countries, such as the US and the UK, this kind of incentive payments is still increasing and developing in Taiwan[179]. Murphy (1999) cites *Towers Perrin's 1997 Worldwide Total Remuneration report*, and indicates that LTIPs (and options) are absent in nine of the 23 countries surveyed[180], and comprise less than 5% of total pay in 13 of these 23 countries. Since Taiwanese companies had started to grant restricted shares and warrants in 2000, the media started to spread stories of fortunes gained through shares and warrants. These reports suggested that restricted shares and warrants were becoming much more popular than cash compensation in Taiwan,

[179] In the past, Taiwanese companies could issue new shares to employees under only two situations: the distribution of non-executive employees' share-based compensation and "equity offerings for cash" (Chen, 2002, p.42). Starting from August, 2000, companies are allowed to repurchase their outstanding shares and distribute them as non-executive employees' share-based compensation. Regarding warrants, please see Section 8.2.2 for the discussion.

[180] The nine countries are: Argentina, Belgium, Germany, Japan, New Zealand, South Korea, Spain, Sweden, and Venezuela.

especially in the electronics industry. For example, in 2006, TSMC distributed 34.32 hundred million cash bonuses and 343,200 thousands shares, which is equal to 233.73 hundred million NTD calculated by market value (Economics Daily, A3, 1st May, 2006).

Core et al. (2003, p. 43) ask the question "Do executives and lower level employees actually understand how stock options work and the implicit incentives in these options?" This question can apply to restricted shares as well. Benartzi (2001) indicates that investing a large fraction of their assets in their company's shares is a sub-optimal portfolio choice for employees because they invest large human capital in the company concurrently. An implication of these studies is that "some individuals do not understand the expected distribution of stock prices" (Core et al., 2003, p. 43). According to the descriptive statistics of non-GLCs in Table 10-1, it can be seen that the average ratio of incentive payments (including restricted shares and options) is 29.14%[181] and the maximum ratio of FVBONUS_TOTAL is 84.14%. Through the excessive popularity of restricted shares and warrants, top executives in Taiwan may regard the acceptance of shares and warrants as a method to become wealthy and do not understand the implicit incentives of granting them. The positive relationship between MANOWN and top executives' shares compensation also implies that Taiwanese companies may over-grant shares to top executives.

Third, most non-GLCs are electronics and electric machinery companies. The electronics industry in Taiwan is the industry that is the most profitable and international, and grants the most shares and warrants. Figure 10-2 shows that the share prices of electronics companies have increased significantly over the past decades. Due to the low institutional ownership and high individual ownership in the Taiwanese share market, the share volatility is high in Taiwan, especially for the electronics and electric machinery companies. This phenomenon reinforces the impression that shares and warrants will bring fortunes. Therefore, the risk-aversion argument, which states that the demand of share-based compensation will decrease when the top executives hold more equity of his/her company, is not so convincing in

[181] The average ratio of MVBONUS_TOTAL is 24.26% and the average ratio of WARRANT_TOTOTAL is 4.88%. The sum is 24.26% plus 4.88%, which is equal to 29.14%.

Taiwan, especially in the electronics and electric machinery industry.

Finally, compared to managerial ownership in other developed countries, managerial ownership in Taiwan is relatively low[182]. By studying a sample of over 1,700 American companies in 1992-1997, Bryan et al. (2000) report that the mean (standard deviation) of CEO ownership is 3.19% (7.18%), which is much larger than CEO ownership in Taiwan, which is 0.41% for GLCs and 0.44% for non-GLCs. Studying 5,955 American companies during 1984-1991, Yermack (1995) also reports that the average CEO ownership is 2.41%. Kang and Shivdasani (1995) report that the average management equity ownership in Japan is 2.20 % by studying 270 non-financial Japanese companies covered in the 1984 volume of Moody's International Reports. Based on these prior studies, we can observe that managerial ownership in Taiwan is relatively low.

On the other hand, Core and Larcker (2002) conclude that the target ownership plan is adopted when the directors realise that the company has a governance problem. Their results support the premise that companies with low managerial ownership will be more likely to adopt the target ownership plan. Given low managerial ownership and the insignificant relationship between the governance variables and the ratio of top executives' shares compensation, it can be seen that the positive relationship between managerial ownership (MANOWN) and the ratio of top executives' shares compensation (measured either by FVBONUS_TOTAL or MVBONUS_TOTAL) is possible because a company with weak governance arrangements may grant more shares to substitute for cash compensation to compensate for their weak direct oversight of the managerial function.

[182] Meanwhile, because of family control, many directors in Taiwanese companies are family members. Therefore, board ownership in Taiwan is higher than managerial ownership. Please refer to Table 10-1 for the statistics.

Table 10-5 Empirical results for Top executives' shares compensation by using a Tobit model

Dependent variable – FVBONUS_TOTAL: the ratio of the top executives' cash bonus and shares compensation calculated by par value to top executives' compensation. MVBONUS_TOTAL: the ratio of the top executives' cash bonus and shares compensation calculated by market value to top executives' compensation. SHAREBASED_F: the ratio of the top executives' share-based compensation (including restricted shares and warrants) calculated by face value and Back-Scholes to top executives' compensation. SHAREBASED_M: the ratio of the top executives' share-based compensation (including restricted shares and warrants) calculated by market value and Back-Scholes to top executives' compensation.

	GLCs				non-GLCs			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	FVBONUS_TOTAL	MVBONUS_TOTAL	SHAREBASED_F	SHAREBASED_M	FVBONUS_TOTAL	MVBONUS_TOTAL	SHAREBASED_F	SHAREBASED_M
Variable	beta (significance)	beta (significance)	beta (significance)	beta (significance)	beta (significance)	beta (significance)	beta (significance)	beta (significance)
constant	-135.538 (0.015)**	-171.857 (0.024)**	-130.789 (0.017)**	-166.906 (0.025)**	-48.170 (0.371)	-78.096 (0.315)	-119.692 (0.050)*	-152.649 (0.062)*
CHAIR	8.798 (0.313)	4.103 (0.730)	12.725 (0.135)	8.684 (0.451)	-4.079 (0.388)	-2.963 (0.663)	0.213 (0.968)	1.410 (0.842)
ROE	1.677 (0.033)**	2.230 (0.036)**	1.900 (0.017)**	2.444 (0.022)**	0.018 (0.946)	0.106 (0.781)	-0.082 (0.783)	-0.001 (0.998)
ROA	0.204 (0.844)	0.703 (0.618)	-0.415 (0.689)	0.067 (0.962)	1.024 (0.043)**	1.539 (0.035)**	1.164 (0.042)**	1.657 (0.031)**
TSR	-0.068 (0.531)	-0.116 (0.437)	-0.041 (0.706)	-0.087 (0.551)	-0.287 (0.000)***	-0.388 (0.001)***	-0.265 (0.004)***	-0.357 (0.004)***
LEVERAGE	-2.216 (0.246)	-0.283 (0.262)	-0.094 (0.604)	-0.153 (0.531)	-0.227 (0.129)	-0.325 (0.132)	-0.122 (0.465)	-0.214 (0.342)
RD	-0.994 (0.473)	-0.587 (0.750)	1.106 (0.373)	1.599 (0.342)	-1.059 (0.157)	-1.510 (0.161)	0.235 (0.774)	-0.090 (0.935)
OUTSIDE	-0.248 (0.077)*	-0.303 (0.114)	-0.242 (0.083)*	-0.293 (0.120)	-0.024 (0.816)	0.040 (0.786)	-0.155 (0.176)	-0.097 (0.526)
BANK_D	-0.614 (0.020)**	-0.699 (0.048)**	-0.671 (0.013)**	-0.750 (0.036)**	-0.024 (0.931)	-0.113 (0.773)	-0.056 (0.856)	-0.161 (0.697)
BLOCK	-0.406 (0.037)**	-0.541 (0.042)**	-0.383 (0.046)**	-0.518 (0.047)**	-0.132 (0.371)	-0.223 (0.293)	-0.048 (0.772)	-0.138 (0.536)
BDOWN	0.013 (0.986)	0.589 (0.573)	-0.175 (0.821)	0.409 (0.693)	-0.119 (0.723)	-0.071 (0.884)	-0.366 (0.337)	-0.332 (0.515)
MANOWN	-3.998 (0.100)*	-4.682 (0.159)	-4.014 (0.094)*	-4.713 (0.147)	3.555 (0.100)*	7.208 (0.022)**	3.184 (0.194)	6.732 (0.041)**
INST	-0.229 (0.284)	-0.307 (0.287)	-0.288 (0.180)	-0.367 (0.203)	-0.189 (0.260)	-0.198 (0.414)	-0.214 (0.260)	-0.216 (0.396)
FINOWN	-0.597 (0.571)	-0.923 (0.214)	-0.496 (0.354)	-0.808 (0.266)	0.269 (0.460)	0.401 (0.445)	0.247 (0.549)	0.397 (0.472)
SIZE	7.025 (0.002)***	8.751 (0.004)***	6.689 (0.003)***	8.392 (0.005)***	2.858 (0.183)	4.186 (0.176)	5.933 (0.015)**	7.407 (0.023)**
Observations	61	61	61	61	138	138	138	138
left-censored observations	23	23	22	22	35	35	32	32
Pseudo R square	0.118	0.114	0.124	0.118	0.035	0.038	0.027	0.030
Likelihood ratio test	47.22 (0.000)***	48.38 (0.000)***	50.84 (0.000)***	51.22 (0.000)***	35.71 (0.001)***	41.34 (0.000)***	28.87 (0.010)***	34.00 (0.002)***

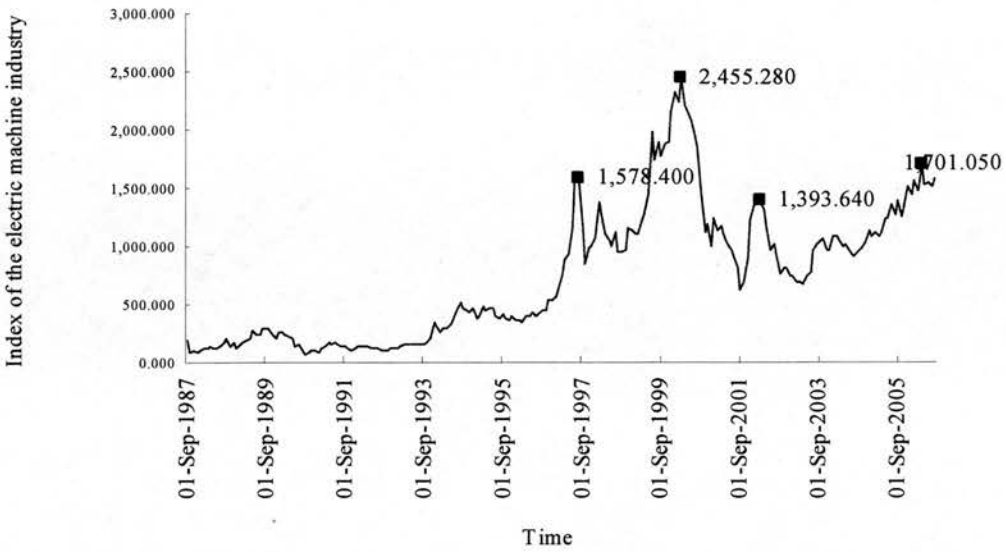
*p<0.1; **p<0.05; ***p<0.01

Note: Pseudo-R^2 = 1 − L1/L0, where L0 and L1 are the constant-only and full model log-likelihoods[183]

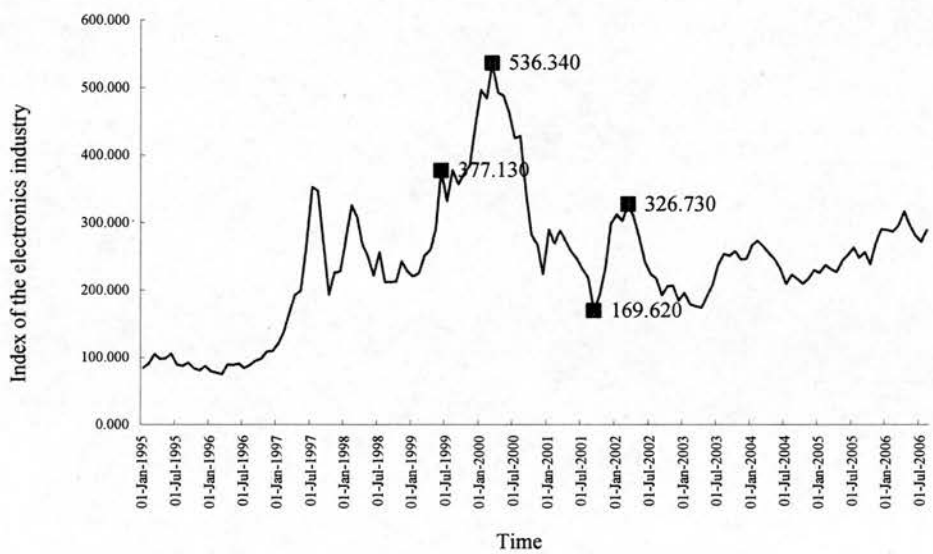
[183] For discrete distributions, the log likelihood is the log of a probability, so it is always non-positive. Thus, $0 \geq L1 \geq L0$, and so $0 \leq L1/L0 \leq 1$, and so $0 \leq$ Pseudo-$R^2 \leq 1$ for discrete distributions. For continuous distributions, the log likelihood is the log of a density. Since density functions can be greater than 1 (cf. the normal density at 0), the log likelihood can be positive or negative.
If $L1 > 0$ and $L0 < 0$, then $L1/L0 < 0$, and $1 - L1/L0 > 1$. If $L1 > L0 > 0$ and then $L1/L0 > 1$, and $1 - L1/L0 < 0$.

This formula for Pseudo-R^2 can give values bigger than 1 or smaller than 0 for continuous or mixed continuous/discrete likelihoods like the Tobit model. Therefore, it is better to report the likelihood ratio test and its p-value.

A. The index of the electric machinery industry in Taiwan, 1987-2006



B. The index of the electronics industry in Taiwan, 1995-2006



Note: The TSEC began to organise the index of electronics industry in 1995.
Source: Taiwan Stock Exchange (TSEC)

Figure 10-2 The indices of the electric machinery industry and the electronics industry in Taiwan

In addition to restricted shares, top executives' share-based compensation also includes warrants in Taiwan. We construct two variables (SHAREBASED_F and

SHAREBASED_M [184]) to measure the ratio of top executives' share-based compensation to top executives' compensation. The Tobit model is also used for the two variables.

Columns (3) and (4) in Table 10-5 present the empirical results for GLCs and Columns (7) and (8) in Table 10-5 for non-GLCs. Since the results are similar to those using FVBONUS_TOTAL and MVBONUS_TOTAL, a brief explanation is given. ROE is positively associated with SHAREBASED_F and SHAREBASED_M in GLCs. A one-percentage point increase in ROE will raise SHAREBASED_F by 1.900 percentage points and SHAREBASED_M by 2.444 percentage points. Similarly, ROA is positively associated with SHAREBASED_F and SHAREBASED_M in non-GLCs. A one-percentage point increase in ROA translates roughly into a 1.164 percentage point increase in SHAREBASED_F and a 1.657 percentage point increase in SHAREBASED_M. Therefore, Hypothesis 1b is supported. Companies with better performance will grant more share-based compensation to top executives. Unlike the work by Bryan et al. (2000) who find a significant negative relationship between LEVERAGE and the granting of options, and that of Core (2001) who finds a significant positive relationship between cash constraints and the granting of options, the coefficient of the proxy variable for cash constraints (LEVERAGE) is not significant for GLCs and non-GLCs. Therefore, Hypothesis 8 is not supported.

To sum up, Hypotheses 3, 4, 6, and 7 are supported by the analysis for GLCs because OUTSIDE, BANK_D, BLOCK, and BDOWN have negative relationships with SHAREBASED_F and SHAREBASED_M. Referring to Tables 10-3, 10-4, and 10-5, these results support the argument that external governance in GLCs is efficient once again. Conversely, the relationship between external governance in non-GLCs and top executives' share-based compensation is not significant, which is consistent with

---

[184] SHAREBASED_F is calculated by par value, which is from the company's viewpoint, whereas SHAREBASED_M is measured by market value which is from the employees' viewpoint.

$SHAREBASED\_F_i = FVBONUS\_TOTAL_i + WARRANT\_TOTAL_i$

$SHAREBASED\_M_i = MVBONUS\_TOTAL_i + WARRANT\_TOTAL_i$

the argument that external and internal governance is not as effective and should be improved to avoid the phenomenon of extracting rents by top executives. This finding that the boards in GLCs are more effective differs from those in prior studies, which often view the intervention of government as a source of inefficiency (e.g. Shleifer, 1998; La Porta et al., 2002)[185].

[185] Because of the prevalence of employees' bonuses in Taiwan, we also examine the relationship between the grant of employees' bonuses to non-executive employees and the corporate governance mechanisms in GLCs and non-GLCs. Due to the insignificance of the year-end bonuses and the unavailability of data, we measure non-executive employees' incentive payments by employees' bonuses in this thesis. We find that firm performance is positively related to the grant of employees' bonuses to non-executive employees whereas the level of cash constraints is negatively related to it, which means that companies with more cash constraints will distribute fewer employees' bonuses to non-executive employees. Additionally, the grant of employees' bonuses to non-executive employees is positively related to the investment opportunities in non-GLCs. However, based on the insignificant relationship between the grant of employees' bonuses to non-executive employees and other corporate governance determinants in non-GLCs, we can conclude that non-GLCs may over-grant employees' bonuses to non-executive employees. In conclusion, compared to the grant of share-based compensation to top executives and non-executive employees in GLCs, the argument that the grant in non-GLCs is not efficient is supported.

10.3 Conclusion

With the latest reform of corporate governance in Taiwan, the disclosure of top executives' compensation has become more transparent. Using the latest data and various regressions, this chapter examines whether firm performance and corporate governance mechanisms are related to the level and structure of top executives' compensation. Because of data limitations, this thesis also makes use of adjustment indices to estimate CEO compensation in Taiwan more precisely. Moreover, in order to observe whether political intervention in Taiwan is associated with the level and structure of top executives' compensation, we classify companies as GLCs and non-GLCs in regressions.

Concentrating first on average top executives' compensation, the empirical results illustrate that outside directors in GLCs play a significant monitoring role on corporate governance in Taiwan because the ratio of outside directors on the board is negatively associated with the average top executives' compensation and adjusted CEO compensation (Tables 10-3 and 10-4). Conversely, outside directors in non-GLCs are not significantly associated with average top executives' compensation. Meanwhile, firm size plays an important role of affecting average top executives' compensation in GLCs and non-GLCs. Whether GLCs or non-GLCs, larger companies will grant more compensation to top executives. This finding is consistent with that of Lin (2005), who examines CEO cash compensation in Taiwan, and a host of previous studies in the area (Murphy, 1999, Tosi et al., 2000).

Owing to the reform of the transparency of disclosure, Taiwanese companies have started to disclose top executives' compensation more clearly. Hence, in addition to the level of top executives' compensation, this thesis also investigates its structure. As far as we know, this thesis is the first research exercise to examine the structure of top executives' compensation in Taiwan. According to the empirical results in Table 10-5, we find that firm performance is positively related to the grant of restricted shares to top executives in GLCs and non-GLCs. However, internal governance (i.e. the board of directors) and external governance (i.e. banks, other affiliated companies,

and blockholders) are not significantly related to the grant of restricted shares to top executives in non-GLCs, whereas they are negatively associated to it in GLCs. Given the argument that companies may choose to substitute devices within different mechanisms, this result implies that the substitution between internal/external governance and top executives' incentive payments is more effective in GLCs. In other words, the top executives' compensation package in non-GLCs may not be effectively designed. Table 10-8 summarises these results.

In this Chapter, it can be seen that the empirical results concerning CEO compensation in the Anglo-Saxon model are not entirely mirrored in those in Taiwan. For example, managerial ownership is positively related to top executives' share-based compensation in non-GLCs, which demonstrates that although the Taiwanese authorities have started to reform corporate governance, top executives' compensation and the granting of incentive payments to top executives are not necessarily associated with the corporate governance mechanism, especially in non-GLCs. Therefore, the authorities in Taiwan still need to continue their reform to make the alignment between the interests of executives and those of shareholders and the monitoring ability of boards of directors more effective and functional. The reform of corporate governance has nonetheless required Taiwanese companies to strengthen and improve corporate governance. The next chapter summarises the findings of this thesis, identifies potential applications of this research, and maps out directions for future research. It also includes possible policy implications arising from the analysis and the comparison between legal systems.

Table 10-6 Summary of results on top executives' compensation

Hypothesis	Argument	GLCs	Non-GLCs
H1a	Average top executives' compensation is expected to be positively associated with past firm performance.	Not Significant	Accept
H1b	The ratio of average top executives' share-based compensation to average top executives' compensation is expected to be positively associated with past firm performance.	Accept	Accept
H2	The ratio of average top executives' share-based compensation to average top executive compensation is expected to be positively associated with investment	Not Significant	Not Significant
H3	The ratio of average top executives' share-based compensation to average top executives' compensation is expected to be negatively associated with the ratio of	Accept	Not Significant
H4	The ratio of average top executives' share-based compensation to average top executives' compensation is expected to be negatively associated with the ratio of bank representatives on the board.	Accept	Not Significant
H5a	When the positions of CEO and chairman are held by the same person, average top executives' compensation is expected to be higher.	Accept (*)	Not Significant
H5b	The relationship between CEO duality and the ratio of average top executives' share-based compensation to average top executives' compensation will be positive.	Not Significant	Not Significant
H6	The ratio of average top executives' share-based compensation to average top executives' compensation is expected to be negatively associated with blockholder/board/cross-shareholding/financial ownership.	Acccept	Not Significant
H7	The ratio of average top executives' share-based compensation to the total compensation is expected to be negatively associated with managerial ownership.	Accept	Reject
H8	Companies with cash constraints will grant more shares and warrants to top executives as a substitute for cash.	Not Significant	Not Significant
H9a	Average top executives' compensation is expected to be positively associated with firm size.	Accept	Accept
H9b	The ratio of average top executives' share-based compensation to average top executives' compensation is expected to be positively associated with firm size.	Accept	Accept

(*) Average top executives' compensation in this table indicates the variable ATEC rather than the variable W_CEO_PAY.

Chapter Eleven

Conclusion

The body of literature on corporate governance in Asia has grown quickly due to the financial crisis in 1997 and numerous associated financial scandals, which resulted from the lack of an independent corporate governance mechanism. While studies based on samples from countries with stock market capitalism conclude that corporate governance significantly affects firm performance, most of the literature ignores the phenomenon that Asian governments and financial institutions intervene in many companies. In addition, most empirical analysis focuses on the relationship between the corporate governance mechanism and firm performance. Although some contextual research examines internationalisation in Asia, the relationship between the corporate governance mechanism and international expansion is seldom examined empirically under the consideration of intervention of government and financial institutions.

To address this gap in the literature, we use structural equation modelling to examine corporate governance and political involvement in Japan and Taiwan. These countries share similar board structure and extent of political involvement. First, we have investigated the relationship between the employment of ex-bureaucrats from the government (e.g. MoF and BoJ in Japan and MOEA in Taiwan) and financial institutions onto the boards of private sector companies. We find that government and financial institutions are more likely to intervene in companies with poor performance. This finding rejects the argument that claims that *amakudari*[186] is predominantly used as a reward system. For example, Kaplan and Minton (1994, p. 233) indicate that *amakudari* "are generally considered rewards" and therefore do not consider them as a form of intervention. However, the empirical results also suggest that political involvement and financial intervention is not subsequently accompanied by better firm performance. This finding is similar to that of Horiuchi and Shimizu

[186] Please refer to Section 2.2.1 for the discussion of the system of *amakudari*.

(2001) in that political involvement may jeopardise capital adequacy, but it contradicts the findings of Van Rixtel and Hassink (2002), who suggest that political involvement improves profitability in the finance industry.

Based on the different board composition in Japan and Taiwan[187], we anticipate different roles played by Japanese and Taiwanese boards. The interesting finding is that the significant negative relationship between firm performance and the intervention of government and financial institutions is direct in Japan, whereas it is indirect in Taiwan. In Taiwan, the negative relationship is through the board of directors, which indicates that it plays a mediating role and, compared to the Japanese situation, appears to be more influential. Similarly, the relationship between the intervention of government and financial institutions and subsequent firm performance is also direct in Japan and indirect in Taiwan. In Taiwan, intervention will jeopardise the monitoring ability of the board and thereby harm subsequent firm performance. In conclusion, the results confirm the argument that troubled companies tend to recruit retired bureaucrats (*amakudari*) and bank representatives to build the business-government network and thereby gain support from the government. However, such involvement is not positively associated with subsequent firm performance and the subsequent monitoring ability of the board.

In addition to firm performance, this thesis also observes internationalisation in Asia, which may be supported or regulated by the government. Based on the results, we conclude that the relationship between the degree of internationalisation (DOI) and subsequent political intervention in Japan is negative. In the case of Taiwan, this direct and negative relationship is not significant, despite the fact that the total effect from DOI on subsequent political intervention is negative. This finding supports the argument that the role of a government will change with the internationalisation and

[187] Both Japanese and Taiwanese boards are regarded as insider-oriented. Although Japan and Taiwan share some similarities, board composition is different. First, Japanese boards are typically comprised mostly of former employees and representatives from affiliated companies while Taiwanese boards are mostly composed of family members. This difference implies that boards in Japan and Taiwan may have different incentives and behaviour. Moreover, outside directors in Japan are often executives from banks, customers, and parent companies, whereas those in Taiwan are often members from the founding families and banks. Therefore, according to agency theory, these family members who sit on the boards may have stronger incentive to monitor executives while representatives from affiliated companies are sent to solidify good relationships.

development process (Aggarwal and Agmon, 1990; Sim and Pandian, 2003). Since Japan has the most developed economy in Asia, the Japanese government is less likely to intervene in a company and regulate the strategies of internationalisation. Moreover, the negative relationship also demonstrates that a company with a greater DOI is more likely to fend off political intervention.

Furthermore, there is a positive direct relationship between DOI and the subsequent intervention of financial institutions in Japan and Taiwan. This result supports the supposition that institutional investors, such as banks and insurance companies, are likely to be interested in investing in companies with a greater DOI because of the positive effects on their investment (Tihanyi et al., 2003). However, after including the indirect relationship of DOI with financial institutional intervention through the board of directors, we find that the relationship is still positive in Japan but becomes negative in Taiwan. Once again, the different result implies that the board of directors in Taiwan plays an influential role. Since the intervention of government and financial institutions is not accompanied by a greater DOI, we can support the argument that such intervention is inefficient and jeopardises the operation of a company from the viewpoint of performance and internationalisation. Our conclusion also supports the supposition argued by Shleifer and Vishny (1998) which indicates that the informal relationships and corruption raised by political involvement will allow various governmental agencies and bureaucrats to divert from profit maximisation to political goals.

The reform of corporate governance in Taiwan has started in the past five years and executive compensation has become a controversial issue. Therefore, given that political involvement may be inefficient (Shleifer and Vishny, 1998), this thesis also investigates top executives' compensation in Taiwan to observe whether there is a difference between GLCs and non-GLCs. Such a study is not possible for Japan owing to the inadequacy of the data. Consistent with prior studies (e.g. Tosi et al., 2000), we find that firm size is positively related to top executives' compensation in both GLCs and non-GLCs. Additionally, the hypothesis stating that governance mechanisms may substitute for each other is supported in GLCs and non-GLCs

because the relationship between the grant of top executives' share-based compensation is negatively associated with the ratio of outside directors, the ratio of bank representatives on a board, and blockholder ownership. However, this substitution relationship is more obvious in GLCs, which supports the argument that corporate government mechanisms may be more efficient in GLCs. Meanwhile, both the level and the structure of share-based compensation are not positively related to all performance variables. The empirical results of top executives' compensation indicate that although the Taiwanese authorities have started to reform corporate governance in Taiwan, the grants of share-based compensation to top executives are not always related to performance.

However, the argument which claims that the demand of share-based compensation will decrease when the top executives already have had a greater amount of company equity is not supported by non-GLCs in Taiwan. This result suggests two possible explanations. First, top executives in non-GLCs prefer more share-based compensation because they view it as a kind of 'add-on' compensation. Second, given that the calculation and disclosure of share-based compensation is not transparent and sufficient, companies in the electronic or electric machinery industry, which compose 51.45% of non-GLCs, will grant more share-based compensation to substitute cash compensation and minimise the cost.

This thesis is a pioneering piece of research that examines the relationships between political involvement/financial intervention and performance/DOI by using SEM. Moreover, due to the data limitations, this thesis is also the first research that investigates the level and structure of CEO compensation in Taiwan. The discussions concerning the institutional background and corporate governance mechanisms in the US, the UK, Japan, and Taiwan in Chapter 2 and Chapter 8 also illustrate that corporate governance in Japan and Taiwan still calls for further reform. Based on the empirical results presented in this thesis, we make four recommendations regarding policy in Japan and Taiwan.

First, according to the empirical results, the argument which claims that political and financial intervention has negative impact on subsequent firm performance and DOI

is supported. Since the intervention of government and financial institutions is negatively related to subsequent firm performance and DOI, the governments and financial institutions in Japan and Taiwan should not intervene in the operation of companies.

Second, the empirical results in Chapter 6 support the argument that the board of directors in Taiwan plays an intermediate role between the private and public sectors. Furthermore, the net relationship between the board of directors and subsequent firm performance is positive, whereas the net relationship between the board of directors and the intervention of government and financial institutions is negative. In other words, the monitoring ability of the board is negatively associated with such intervention but positively related to subsequent firm performance. Thus, Taiwanese companies should strengthen the monitoring ability of the board and try to fend off the intervention of government and financial institutions. On the other hand, the empirical results do not support the argument that board of directors in Japan play an intermediate role. Therefore, Japanese companies should try to improve the quality of the board, such as lowering the ratio of inside directors, and facilitate the board of directors more functional.

Third, the difficulty of data collection illustrates that the disclosure of CEO compensation is not transparent in Taiwan. The situation is even worse in Japan where companies seldom disclose precise CEO compensation or the value of share-based compensation. Recently, some papers have focused on executive compensation in Japan. However, most data are confidential; for example, Kato and Kubo (2006). Japanese companies only disclose the total amount of directors' and executives' compensation in a very rough way, even rougher than Taiwanese companies do. It is very difficult to know the structure of directors' and executives' compensation in Japanese companies, which results in the difficulty of empirical examinations on the executives' compensation in Japanese companies. Hence, both countries should enhance the disclosure level of corporate governance issues.

Although the necessity of disclosing the information of compensation is confirmed,

the relevant regulations and laws still await the establishment. Currently, the Japanese and Taiwanese government only establish some guidelines which are not enforced but self-regulatory. Therefore, the fourth and final point, which is the most important, is that in addition to the establishment of some non-forcible Articles[188], such as introducing the committee system and utilising grants of options, Japanese and Taiwanese governments should have a series of complementary regulations in place to implement them. Effectively, these Articles exist in name only. For example, outside directors are only required in companies which are listed in TSEC after 21st Feb, 2002. The companies which are listed before 21st Feb, 2002 are only recommended to have outside directors on the boards. Moreover, most independent directors in Taiwan are listed in annual reports only and only truly appear when there is a financial scandal. Therefore, Japanese and Taiwanese governments should first consider the applicability of certain corporate governance mechanisms and then apply them effectively after relevant Articles are established.

Fortunately, both the Japanese and Taiwanese governments have begun to realise the importance of corporate governance and the weakness of political intervention. In Japan, opposition lawmakers in the latest Diet session in 2006 accused bureaucrats hoping to secure positions after retirement of leaking information to contractors bidding for public works[189]. Consequently, a proposal has been included in the final draft of the government ethics rules titled "A New Direction for Personnel Management of Public-Sector Workers", but it is not expected to be implemented until the next session of parliament in 2007. This draft will prohibit government officials from searching for jobs with companies linked to their current duties. Legislation revising the National Public Service Law to incorporate these new rules may be presented to the Diet in 2007. Meanwhile, similar to IFRS 2[190], the

---

[188] Laws in Japan do not contain a requirement of having sub-committees on the board. Japanese companies can choose to use the traditional auditor system or the committee system. If they choose to use the traditional auditor system, there is no need to have a nominating/corporate governance committee. Similarly, Laws in Taiwan do not require the board of directors to establish a compensation committee. 'Corporate Governance Best-Practice Principles for TSEC/GTSM Listed Companies' only suggests having a compensation committee. Please refer to Appendix 1 and Appendix 2 for more information.

[189] Japan Times, 12th September, 2006.

[190] The new International Financial Reporting Standard 2 (IFRS 2) came into affect for the accounting period beginning on or after 1st January 2005. This standard requires companies (including EU listed

authorities in Taiwan have begun to regulate the calculation and the disclosure of incentive payments. Statements of Financial Accounting Standards (SFAS) Nos.34 and 36, which were implemented on 1st January, 2006, regulate the disclosure and presentation of financial instruments, including share options granted to employees. Furthermore, starting on 1st January, 2008, employees' incentive payments will be recorded as expenses and deducted from profits. Given these reforms, more important steps would be to create strong corporate governance in Japan and Taiwan in the future.

Although this thesis uses empirical analysis to examine intervention of government and financial institutions in Japan and Taiwan, there are some limitations on the methodology and data. First, since many companies' Securities Reports (*Yukashoken Hokokusho*) before 2001 are not available on the EDINET and the improvement in general transparency regarding governance in Japan and Taiwan are very recent, we have used a short time period. There is only very limited scope for teasing out dynamics. Second, since variables in SEM must follow a normal distribution, dummy variables will result in non-positive and fragile outcomes and the under-identification problem. Therefore, we do not make any allowance for firm-specific effects. Third, although compensation information in Taiwan has been disclosed, it is not as precise as it in countries with stock market capitalism, which inhibits us from making a long-term and detailed observation.

The final and the most important limitation focus on causality. The advantage of SEM is also the disadvantage of it. The advantage of using SEM is that we can combine several variables with similar underlying concept (e.g. DOI) into a latent variable and observe the relationships among latent variables. However, unlike the results obtained by using Granger test, the results obtained by using SEM can only be used to provide an explanation or prediction but not to imply causality. Therefore, our results only reflect a possible way to explain these relationships.

Given these limitations and difficulties encountered during the research period, the

companies) to determine a 'fair value' of employees' share awards and to expense the associated costs in their financial statements.

future research can be continued in several ways. First, some variables is worthy of deep investigation, especially the composition and quality of outside directors. Due to data limitations, this thesis does not consider the composition of outside director, which may influence the monitoring ability of the boards. Therefore, the influence resulted from the different composition of outside directors in Asia where the implementation of adopting outside directors is comparatively weak should be examined deeply in the future. Second, since the Japanese and Taiwanese governments have reformed corporate governance recently, more and more information is disclosed, such as the composition of sub-committees. The future research can focus on the interplay between newly disclosed data and specific phenomena in Asia, such as the relationship between the composition of sub-committees and family control and the latest financial reforms in Japan and Taiwan. Moreover, in addition to SEM which focuses on the underlying concept of variables, different methodologies can be applied to examine the causality between variables. Finally, in due course, with longer data series, it may be possible to tease out the company-specific and year-specific effects that have been subsumed in the analysis above.

In summary, this thesis had addressed three topics – the relationship between the intervention of governments and financial institutions and firm performance, the relationship between the intervention of governments and financial institutions and DOI in Japan and Taiwan by using SEM, and top executives' compensation in Taiwan by using regressions. The main finding is consistent with the supposition argued by Shleifer and Vishny (1998) that the government plays as a grabbing hand which may pursue its own political goals rather than maximising the profits of companies. Top executives' compensation is also examined by applying a range of quantitative methods. Due to data limitation, top executives' compensation in Taiwan is rarely examined and discussed. Our results are consistent with the argument that share-based compensation in Taiwan is not efficiently granted. Although there are some limitations regarding data and methodologies, this thesis breaks new ground by utilising SEM to examine political involvement from the viewpoint of corporate governance, firm performance, and DOI in Japan and Taiwan. Moreover, this thesis

is also a pioneering work which empirically examines the structure of top executives' compensation in Taiwan. It is only owing to the very recent improvement in the level of disclosure of governance and compensation data in Japan and Taiwan that this analysis has been possible. It is hoped that these results at least point the way to the interesting insights available regarding governance effects that are possible through the use of SEM in this context.

Bibliography

1. Abe, N., Gaston, N., and Kubo, K. (2005). Executive pay in Japan: The role of bank-appointed monitors and the main bank relationship. *Japan and the World Economy*, 17: 371-394.
2. Aggarwal, R. and Agmon, T. (1990). The International success of developing country firms: Role of government-directed comparative advantage. *Management International Review*, 30: 163-180.
3. Agrawal, A. and Knoeber, C. R. (1996). Firm performance and mechanisms to control agency problems between managers and shareholders. *Journal of Financial and Quantitative Analysis*, 31: 377-397.
4. Agrawal, A. and Knoeber, C. R. (2001). Do some outside directors play a political role? *Journal of Law and Economics*, 44: 179-199.
5. Ahokangas, P. (1998). Internationalisation and resources: An analysis of processes in Nordic SMEs, Vaasa: Acta Wasaensia, Universitas Wasaensis,.
6. Aitken, A. C. (1934). Note on selection from a multivariate normal population. *Proceedings of the Edinburgh Mathematical Society*, 4: 106-110.
7. Akamatsu, K. (1935). Waga kuni yomo kogyohin no susei. *Shogyo Keizai Ronso*, 13: 129–212.
8. Akamatsu, K. (1937). Waga kuni keizai hatten no sogo benshoho. *Shogyo Keizai Ronso*, 15: 179–210.
9. Analytica (1992). *Board directors and corporate governance: Trends in the G7 countries over the next ten years*. England: Oxford Analytica Ltd.
10. Anderson, M., Banker, R., and Ravindran, S. (2000). Executive compensation in the information technology industry. *Management Science*, 46: 530-547.
11. Anderson, T. W. and Rubin, H. (1956). Statistical inference in factor analysis. In Neyman, J. (eds.), *Proceedings of the third Berkley symposium for mathematical statistics and probability*, 5: 111-150, Berkley: University of California Press.
12. Ang, J. S. and Constand, R. L. (1997). Compensation and performance: The case of Japanese managers and directors. *Journal of Multinational Financial Management*, 7: 275-304.
13. Aoki, M. (1990). Toward an economic model of the Japanese firms. *Journal of Economic Literature*, 28: 1-27.
14. Aoki, M. and Patrick, H. (1994). *The Japanese main bank system*. New York: Oxford University Press.
15. Aoki, M., Patrick, H. and Sheard, P. (1994). The Japanese main bank system: An introductory overview. In Aoki, M. and Patrick, H. (eds.), *The Japanese Main bank System*, New York: Oxford University Press.
16. Association of British Insurers (2005). Principles and guidelines on remuneration. (15 December) ABI, 1 Gresham Street, London EC2V 7HQ.
17. Association of British Insurers (2001). Guidelines for share incentive schemes. (1 March) ABI, 51 Gresham Street, London EC2V 7HQ.
18. Association of British Insurers (1999a). Institutional investment - Initiatives on responsible voting linking pay to performance. Press release, July 19.
19. Association of British Insurers (1999b). Share-Based incentive schemes – Guideline principles. Interpretation and Application in the Context of Currently Evolving Practice. (19 July) ABI, 51 Gresham Street, London EC2V 7HQ.

20. Association of British Insurers (1995). Share option and profit sharing incentive schemes. (February) ABI, 51 Gresham Street, London EC2V 7HQ.
21. Association of British Insurers (1994). Long term remuneration for senior executives, (May) ABI, 51 Gresham Street, London EC2V 7HQ.
22. Association of British Insurers (1993). Share scheme guidance. A joint statement from the investment committees of the ABI and NAPF. ABI, 51 Gresham Street, London EC2V 7HQ.
23. Association of British Insurers (1991). Share incentive scheme guidelines. memorandum. ABI, 51 Gresham Street, London EC2V 7HQ.
24. Association of British Insurers (1987). Share option and profit sharing incentive schemes. Summary of Revision to Guidelines to Requirements of Insurance Offices as Investors. ABI, 51 Gresham Street, London EC2V 7HQ (13 July, addendum 6 May 1988, and amended 14 August 1991).
25. Baber W. R., Janakiraman, S. N., and Sok-Hyon, K. (1996). Investment opportunities and the structure of executive compensation. *Journal of Accounting and Economics*, 21: 297-318.
26. Baker, G. P., Jensen, M. C., and Murphy, K. J. (1998). Compensation and Incentives: Practice vs. Theory. *The Journal of Finance*, 43: 593-616.
27. Baker, G., and Hall, B. (1998). CEO incentives and firm size. NBER Working Paper No. 6868, National Bureau of Economic Research.
28. Baliga, B. R., Moyer, R. C., and Rao, R. S. (1996). CEO duality and firm performance: What's the fuss? *Strategic Management Journal*, 17: 41-43.
29. Balkin, D., Markman, G., and Gomez-Mejia, L. (2000). Is CEO pay in high technology firms related to innovation? *Academy of Management Journal*, 23: 1118–1129.
30. Ball, D. A. and MuCulloch, W. H. (1999). *International Business: The challenge of global competition.* International edition: McGraw-Hill.
31. Barkema, H., and Gomez-Mejia, L. (1998). Managerial compensation and firm performance: A general research framework. *Academy of Management Journal*, 41: 135-145.
32. Barth, J. R., Caprio, G., and Levine, R. (1999). Financial regulation and performance: Cross-country evidence. Milken Institute Policy Brief.
33. Bartness, A. and Cerny, K. (1993). Building competitive advantage through a global network of capabilities. *California Management Review*, winter: 78-103.
34. Beatty, R. P. and Zajac, E. J. (1994). Managerial incentives, monitoring, and risk bearing: A study of executive compensation, ownership, and board structure in initial public offerings. *Administrative Science Quarterly*, 39: 313-335.
35. Bebchuk, L. A., Fried, J. M., and Walker, D. I. (2002). Managerial power and rent extraction in the design of executive compensation. *University of Chicago Law Review*, 69: 751-846.
36. Beck, T and Levine, R. (2002). Stock markets, banks, and growth: Panel evidence. NBER Working Papers No. 9082, National Bureau of Economic Research.
37. Becker, W. H. (1982). *The dynamics of business-government relations*, Chicago: University of Chicago Press.
38. Benartzi, S. (2001). Excessive extrapolation and the allocation of 401(k) accounts to company stock. *Journal of Finance*, 56: 1747-1764.
39. Bertrand, A. and Mullainathan, S. (2001). Are CEOs rewarded for luck? The

ones without principals are. *The Quarterly Journal of Economics*, 116: 901-932.
40. Bhagat, S., and Black, B. S. (1999). The uncertain relationship between board composition and firm performance. *Business Lawyer*, 54: 921-963.
41. Bhagat, S., and Black, B. S. (2001). The non-correlation between board independence and long-term firm performance. *Journal of Corporation Law*, 27: 231-273.
42. Boardman, A. E. and Vining, A. R. (1989). Ownership and performance in competitive environments: A comparison of the performance of private, mixed, and state-owned enterprises, *Journal of Law and Economics*, 32: 1-33.
43. Boddewyn, J. J., and Brewer, T. L. (1994). International business political behaviour: New theoretical directions. *Academy of Management Review*, 19: 119-143.
44. Bollen, K. A. (1989). *Structural equation modelling with latent variables*, New York: John Wiley.
45. Bollen, K. A. and Long, J. S. (1993). *Testing structural equation models*. Sage: London.
46. Boycko, M., Shleifer, A., and Vishny, R. W. (1996). A Theory of privatization. *The Economic Journal*, 106: 309-319.
47. Boyd, B. K. (1994). Board control and CEO compensation. *Strategic Management Journal*, 15: 335-344.
48. Boyd, B. K. (1996). Determinants of US outside director compensation. *Corporate Governance: An international Review*, 4: 202-211.
49. Braiotta, L. and Sommer, A. A. (1987). *The essential guide to efficient corporate board committees*. New York: Prentice Hall.
50. Brickley, J. A., Coles, J. l., and Jarrell, G. (1997). Leadership structure: Separating the CEO and chairman of the board. *Journal of Corporate Finance*, 3: 189-220.
51. Brickley, J. A., Lease, R. C., and Smith, C. W. (1988). Ownership structure and voting on antitakeover amendments. *Journal of Financial Economics*, 20: 267–291.
52. Browne, M. W. (1982). Covariance structures. In Hawkins, D. M. (eds.), *Topics in applied multivariate analysis*, London: Cambridge University Press.
53. Browne, M. W. (1984). Asymptotic distribution free methods in the analysis of covariance structures. *British Journal of Mathematical and Statistical Psychology*, 37: 62-83.
54. Browne, M. W. and Cudeck, R. (1993) Alternative ways of assessing model fit. In Bollen, K. A. and Long, J. S. (eds.), *Testing structural equation models*, Newbury, CA: Sage.
55. Bryan, S., Hwang, L., and Lilien, S. (2000). CEO stock-based compensation: An empirical analysis of incentive-intensity, relative mix, and economic determinants. *Journal of Business*, 73: 661-693.
56. Buck, T., Bruce, A., Main, B. G. M., and Udueni, H. (2003). Long term incentive plans, executive pay and UK company performance. *Journal of Management Studies*, 40: 1709-1727.
57. Buck, T., Liu, X., and Wang, D. (2006). Top executive pay and firm performance in China. Working Paper, Academy of Management 2006 Annual Meeting.
58. Bushee, B. J. (1998). The influence of institutional investors on myopic R&D

investment behaviour. *Accounting Review*, 73: 305–333.
59. Bushee, B. J. (2001). Do institutional investors prefer near-term earnings over long-run value? *Contemporary Accounting Research*, 18: 207–246.
60. Bushman, R. M., Indjejikian, R. J., and Smith, A. (1996). CEO compensation: The role of individual performance evaluation. *Journal of Accounting and Economics*, 21: 161-193.
61. Cadbury Committee (1992). *The financial aspects of corporate governance*. London: Professional Publishing Ltd.
62. Caprio, G. Jr. and Peria, M. (2000). Avoiding disaster: Policies to reduce the risk of banking crises. Working Paper, World Bank mimeo and Egyptian Centre for Economic Studies.
63. Carpenter, M. A. and Sanders, W. G. (2004). The effects of top management team pay and firm internationalisation on MNC performance. *Journal of Management*, 30: 509-528.
64. Carpenter, S. (2003). *Special corporations and the bureaucracy: Why Japan can't reform?* London: Palgrave Macmillan.
65. Chandler, A. D. (1962). *Strategy and structure: Chapters in the history of the industrial enterprise*. Cambridge, MA: MIT Press.
66. Chen, C. Y. (2002). Additional evidence on the association between director stock ownership and incentive compensation. *Review of Quantitative Finance and Accounting*, 19: 21-44.
67. Chen, D. H., Fan, J. P. H. and Wong, T. J. (2003). Do politicians jeopardize professionalism? Decentralization and the structure of Chinese corporate boards. Working Paper, Shanghai University of Finance and Economics and Hong Kong University of Science and Technology.
68. Chen, W. S. (1999). The manufacturing strategy and competitive priority of SMEs in Taiwan: A case survey. *Asia Pacific Journal of Managemen*t, 16: 331-349.
69. Cheng, T. J. (1993). Guarding the commanding heights: The State as banks in Taiwan. In Haggard, S., Lee, C., and Maxfield, S. (eds.), *The politics of finance in developing countries*. New York: Cornell University Press.
70. Chhibber, P. K. and Majumdar, S. K. (1999). Foreign ownership and profitability: Property rights, control, and the performance of firms in Indian industry. *Journal of Law and Economics*, 42: 209-238.
71. Chiou, H. J. (2004). *Principles and practices of structural equation modelling with LISREL*. Taipei: Yeh-Yeh Book Gallery.
72. Chu, Y. H. (1994). The realignment of business-government relations and regime transition in Taiwan. In MacIntyre, A. (eds.), *Business and government in industrializing Asia*. New York: Cornell University Press.
73. Cin, B. C., Han, T. S., and Smith, S. C. (2003). A tale of two tigers: Employee financial participation in Korea and Taiwan. *International Journal of Human Resource Management*, 14: 920-941.
74. Claessens, S., Djankov, S., and Lang, L. H. P. (2000a). The separation of ownership and control in East Asian corporations. *Journal of Financial Economics*, 58: 81-112.
75. Claessens, S., Djankov, S., and Klapper L. (2000b). The role and functioning of business groups in East Asia and Chile. *Revista ABANTE*, 3: 97-107.
76. Claessens, S. and Fan, J. P. H. (2002). Corporate governance in Asia: A survey.

International Review of Finance, 3: 71-103.
77. Coles, J. W., McWilliams, V. B., and Sen, N. (2001). An examination of the relationship of governance mechanisms to performance. *Journal of Management*, 27: 23–50.
78. Colignon, R. A. and Usui, C. (2003). *Amakudari: The hidden fabric of Japan's economy*. New York: Cornell University Press.
79. Combined Code (1998). *Principles of good governance and code of best practice*. London: Gee Publishing.
80. Combined Code (2003). *Principles of good governance and code of best practice*. London: Gee Publishing.
81. Conner, K. (1991). An historical comparison of resource-based theory and five schools of thought within industrial organization economics: Do we have a new theory of the firm? *Journal of Management*, 17: 121-154.
82. Conyon, M. J. (1997). Corporate governance and executive compensation. *International Journal of Industrial Organization*, 15: 493-509.
83. Conyon, M. J. and Freeman, R. B. (2003). Firm benefits from share owning workers. In Pickford, J. (eds.), *Mastering people management*. New Jersey: FT Prentice Hall.
84. Conyon, M. J. and Peck, S. I. (1998). Board control, remuneration committees, and top management compensation. *Academy of Management Journal*, 41: 146-157.
85. Conyon, M. J., Peck, S. I., Read, L. E., and Sadler, G. V. (2000). The structure of executive compensation contracts: UK evidence. *Long Range Planning*, 33: 478-503.
86. Cooke, T. E. and Sawa, E. (1998). Corporate governance structure in Japan – form and reality. *Corporate Governance: An International Review*, 6: 217-223.
87. Cooley, W. W. (1978). Explanatory observational studies. *Educational Researcher*, 7: 9-15.
88. Core, J., Holthausen, R. W., and Larcker, D. F. (1999). Corporate governance, CEO compensation, and firm performance. *Journal of Financial Economics*, 51: 371-406.
89. Core, J. E. and Guay, W. R. (1999). The use of equity grants to manage optimal equity incentive levels. *Journal of Accounting and Economics*, 28: 151-184.
90. Core, J. E. and Guay, W. R. (2001). Stock option plans for nonexecutive employees. *Journal of Financial Economics*, 61: 253-287.
91. Core, J. E. and Guay, W. R. (2002). Estimating the value of employee stock option portfolios and their sensitivities to price and volatility. *Journal of Accounting Research*, 40: 613-630.
92. Core, J. E. and Larcker, D. F. (2002). Performance consequences of mandatory increases in executive stock ownership. *Journal of Financial Economics*, 64: 317-340.
93. Core, J. E., Guay, W. R., and Larcker, D. F. (2003). Executive equity compensation and incentives: A survey. *Economic Policy Review*, 9: 27-50.
94. Cragg, M. I. and Dyck, A. (2003). Privatization and management incentives: Evidence from the United Kingdom. *The Journal of Law, Economics, and Organization*, 19: 176-217.
95. Daily, C. M. and Dalton, D. R. (1994). Corporate governance and the bankrupt firm: An empirical assessment. *Strategic Management Journal*, 15: 643–654.

96. Daily, C., Johnson, J., Ellstrand, A., and Dalton, D. (1998). Compensation committee composition as a determinant of CEO compensation. *The Academy of Management Journal*, 41: 209-220.
97. Dalton, D. R., Daily, C. M., Ellstrand, A. E., and Johnson, J. L. (1998). Meta-Analytic reviews of board composition, leadership structure, and financial performance. *Strategic Management Journal*, 19: 269–290.
98. Davidson, W. H. (1980). The location of foreign direct investment activity: Country characteristics and experience effects. *Journal of International Business Studies*, 11(2): 9–22.
99. Davidson, W. H. (1983). Market similarity and market selection: Implications for international marketing strategy. *Journal of Business Research*, 11: 439–456.
100. Davis, J. H., Schoorman, F. D., and Donaldson, L. (1997). Toward a stewardship theory of management. *Academy of Management Review*, 22: 20–47.
101. Davis, G. F. and Thompson, T. A. (1994). A social movement perspective on corporate control. *Administrative Science Quarterly*, 39: 141–173.
102. De Long, J. B., Shleifer, A., Summers, L. H., and Waldmann, R. J. (1990). Noise trader risk in financial markets. *Journal of Political Economy*, 98: 703-738.
103. Del Guercio, D. and Tkac, P. A. (2002). The determinants of the flow of funds of managed portfolios: Mutual funds versus pension funds. *Journal of Financial and Quantitative Analysis*, 37: 523-557.
104. Delios, A. and Henisz, W. J. (2003a). Policy uncertainty and the sequence of entry by Japanese firms, 1980-1998. *Journal of International Business Studies*, 34: 228-241.
105. Delios, A. and Henisz, W. J. (2003b). Political hazards, experience and sequential entry strategies: The international expansion of Japanese firms, 1980-1998. *Strategic Management Journal*, 24: 1153-1164.
106. Demsetz, H. and Lehn, K. (1985). The structure of corporate ownership: Causes and consequences. *Journal of Political Economy*, 93: 1155–1171.
107. Denis, D. J. and Sarin, A. (1999). Ownership and board structures in publicly traded corporations. *Journal of Financial Economics*, 52: 187-223.
108. Dewenter, K. L. and Malatesta, P. H. (2001). State-owned and privately-owned firms: An empirical analysis of profitability, leverage, and labour intensity. *American Economic Review*, 91: 320-334.
109. Dobson, W. and Chia, S. Y. (1997). *Multinationals and East Asian Integration.* Singapore: International Development Research Centre, Canada and Institute of Southeast Asian Studies.
110. Doukas, J. and Travlos, N. G. (1988). The effect of corporate multinationalism on shareholders wealth: Evidence from international acquisitions. *Journal of Finance*, 43: 1161–1175.
111. Dörrenbächer, C. (2000). Measuring corporate internationalisation: A review of measurement concepts and their use. Discussion paper, Wissenschaftszentrum Berlin für Sozialforschung.
112. Dunning, J. H. (1977). Trade, location of economic activity and the Multinational enterprise: A Search for an eclectic approach. In Ohlin, B. et al. (eds.), *The International allocation of economic activity: The international allocation of economic activity*. New York: Holmes and Meier.
113. Dunning, J. H. (1981a). *International production and the multinational*

enterprise. London: George Allen and Unwin.
114. Dunning, J. H. (1981b). Explaining the international direct investment position of countries: Towards a dynamic or development approach. *Weltwirtschaftliches Archiv*, 117: 30–64.
115. Dunning, J. H. (1985). Quarterly research review: Research on third world multinationals. *Multinational Business*, 4: 39–45.
116. Dunning, J. H. (1986). The investment development and third world multinationals. In Khan, K. M. (eds.), *Multinationals from the South: New actors in the international economy*. London: Pinter Publishers.
117. Dunning, J. H. (1988). The eclectic paradigm of international production: A restatement and some possible extensions. *Journal of International Business Studies*, 19: 1–25.
118. Dunning, J. H. (1993). *Multinational enterprises and the global economy*. England: Addison-Wesley.
119. Dunning, J. H. (1995). Reappraising the eclectic paradigm in an age of alliance capitalism. *Journal of International Business Studies*, 26: 461–491.
120. Dunning, J. H. and Narula, R. (1996). *Foreign direct investments and governments: Catalysts for economic restructuring*. London: Routledge.
121. Dunning, J. H., Van Hoesel, R., and Narula, R. (1998). Third world multinationals revisited: New developments and theoretical implications. In Dunning, J. H. (eds.), *Globalisation, trade and investment*. Amsterdam: Elsevier.
122. Dunning, J. H. (2001). The eclectic paradigm of international production: Past, present and future. *International Journal of the Economics of Business,* 8: 173-190.
123. Ellstrand, A. E., Tihanyi, L., and Johnson, J. L. (2002). Board structure and international political risk. *Academy of Management Journal*, 45: 769-777.
124. Engel, E., Gordon, E., and Hayes, R. (2001). Incentives and governance in entrepreneurial firms. Unpublished working paper, University of Chicago.
125. Erramilli, M. K., Srivastava, R., and Kim, S. S. (1999). Internationalization theory and Korean multinationals. *Asia Pacific Journal of Management*, 16: 29–45.
126. Fama, E. F. and Jensen M. C. (1983). Separation of ownership and control. *Journal of Law and Economics*, 26: 301-325.
127. Faccio, M. (2006). Politically-connected firms. *American Economic Review*, 96: 369-386.
128. Faccio, M. and Lang, L. H. P. (2002). The separation of ownership and control: An analysis of ultimate ownership in western European corporations. *Journal of Financial Economics*, 65: 365-395
129. Faccio, M. and Lasfer, M.A. (1999). Managerial ownership, board structure and firm value: The UK evidence. Working paper.
130. Faccio, M., Masulis, R., and McConnell, J. J. (2006). Political connections and corporate bailouts. *Journal of Finance*, forthcoming.
131. Feeney, J. and Hillman, A. (2001). Privatization and the political economy of strategic trade policy. *International Economic Review*, 42: 535-556.
132. Ferranini, G., Moloney N., and Vespro, C. (2003). Executive remuneration in the EU: Comparative law and practice. European Corporate Governance Institute, Law Working Paper, No. 09/2003 (June).

133. Ferris, S. P., Kim, K. A., and Kitsabunnarat, P. (2001). Is managerial equity ownership an alternative governance mechanism for Japanese firms? *Advance in Financial Economics*, 6: 39-63.
134. Ferris, S. P., Jagannathan, M., and Pritchard, A. C. (2003). Too busy to mind the business? Monitoring by directors with multiple board appointments. *The Journal of Finance*, 58: 1087-1112.
135. Filatotchev. I., Lien, Y. C., and Piesse, J. (2005). Corporate governance and performance in publicly listed, family-controlled firms: Evidence from Taiwan. *Asia Pacific Journal of Management*, 22: 257-283.
136. Finkelstein, S. and Boyd, B. K. (1998). How much does the CEO matter? The role of managerial discretion in the setting of CEO compensation. *Academy of Management Journal*, 41: 179-199.
137. Finkelstein, S. and Hambrick, D. (1988). Chief executive compensation: A synthesis and reconciliation. *Strategic Management Journal*, 10: 543-558.
138. Finkelstein, S. and Hambrick, D. (1989). Chief executive compensation: A study of the intersection of markets and political processes. *Strategic Management Journal*, 10: 121-134.
139. Finkelstein, S. and Hambrick, D. (1996). *Strategic leadership: Top executives and their effects on organization.* Mason, OH: South-Western College.
140. Fosberg, R. H. and Nelson M. R. (1999) Leadership structure and firm performance. *International Review of Financial Analysis*, 8, 83~96.
141. Frank, J. and Myers, C. (1995). Ownership and control. In Siebert, H. (eds.), *Trends in business organization: Do participation and co-operation increase competitiveness?* Michigan: University of Michigan Press.
142. Frye, M. (2001). Equity-based compensation for employees: Firm performance and determinants. Unpublished paper, University of Central Florida.
143. Fung, M. Y., Firth, M., and Rui, O. M. (2002). Corporate governance and CEO compensation in China. Working Paper, Department of Accountancy, The Hong Kong Polytechnic University.
144. Garen, J. E. (1994). Executive compensation and principle-agent theory. *Journal of Political Economy*, 102: 1175-1199.
145. Garrett, G. and Lange, P. (1995). Internationalization, institutions, and political change. *International Organization*, 49: 627-655.
146. Gaver, J. and Gaver, K. (1993). Additional evidence on the association between the investment opportunity set and corporate financing, dividend, and compensation policies. *Journal of Accounting and Economics*, 16: 125-160.
147. Garrett, G. (1996). Capital mobility, trade, and the domestic politics of economic policy. In Keohane, R. O. and Milner, H. V. (1996). *Internationalization and domestic politics*, Cambridge: Cambridge University Press.
148. Gerschenkron, A., (1962). *Economic backwardness in historical perspective*, Cambridge, MA: Belknap Press of Harvard University Press.
149. Gibson, M. S. (2003). Is corporate governance ineffective in emerging markets? *Journal of Financial and Quantitative Analysis*, 38: 231-250.
150. Gomez-Mejia, L. R. (1994). Executive compensation: A reassessment and a future research agenda. In Ferris, G. (eds.), *Research in personnel and human resources management*, Greenwich, CT: JAI Press.
151. Gomez-Mejia; L. R., Tosi, H., and Hinkin, T. (1987). Managerial control,

performance, and executive compensation. *The Academy of Management Journal*, 30: 51-70.
152. Gomez-Mejia, L. R. and Wiseman R. M. (1997). Reframing executive compensation: An assessment and outlook. *Journal of Management*, 23: 291-347.
153. Gompers, P., Ishii, J., and Metrick, A. (2003). Corporate governance and equity price. *The Quarterly Journal of Economics*, 118: 107-155.
154. Greenbury, Sir Richard (1995). *Directors remuneration. Report of a study group chaired by Sir Richard Greenbury*. London: Gee Publishing Ltd (July).
155. Grier, K. (1991) Congressional influence on US monetary policy: An empirical test. *Journal of Monetary Economics*, 28, 33-50.
156. Griffith, J. M. (1999). CEO ownership and firm value. *Managerial and Decision Economics*, 20: 1-8.
157. Guillén, M. F. (2000). Business groups in emerging economies: A resource-base view. *Academy of Management Journal*, 43: 362–380.
158. Haggard, S. (2000). *The political economy of the Asian financial crisis*. Washington: Institute for International Economics.
159. Haggard, S. and MuCubbins, M. (2000). *Presidents, Parliaments and Policy*. Cambridge University Press, New York.
160. Hall, B. J. and Murphy, K. J. (2002). Stock options for undiversified executives. *Journal of Accounting and Economics*, 33: 3-42.
161. Hall, B. J. and Murphy, K. J. (2003). The trouble with stock options. *Journal of Economic Perspectives*, 17: 49-70.
162. Hampel, R. (1998). *Committee on corporate governance. Preliminary report*, August 1997, final report January 1998. London: Gee Publishing Ltd.
163. Han, T. S. (2003). The economic effects of profit sharing and Taiwan-style employee stock ownership plans: Evidence from Taiwanese high-tech firms. *Taiwan Academy of Management Journal*, 3: 1-22.
164. Harriosn, J. R., Torres, D. L., and Kukalis, S. (1988). The changing of the guard; turnover and structural change in the top-management positions. *Administrative Science Quarterly*, 33: 211-232.
165. Harris, R. S. and Ravenscraft, D. (1991). The role of acquisitions in foreign direct investment: Evidence from the U.S. stock market. *Journal of Finance*, 46: 826-844.
166. Hartzell, J. C. and Starks, L. T. (2003). Institutional investors and executive compensation. *Journal of Finance*, 58: 2351-2374.
167. Hassel, A., Hopner, M., Kurdelbusch, A., Rehder, B., and Zugehor, R. (2003). Two dimensions of the internationalization of firms. *Journal of Management Studies*, 40: 705-723.
168. Hausman, J. A. (1978). Specification tests in econometrics. *Econometrica*, 46: 1251-1271.
169. Henisz, W. J. (2000). The institutional environment for economic growth. *Economics and Politics*, 12: 1-31. Reprinted in Henisz, W. J. (2002). *Politics and international investment: Measuring risk and protecting profits*. London: Edward Elgar Publishers Ltd.
170. Henisz, W. J. and Williamson. O. E. (1999). Comparative economic organization - Within and between countries. *Business and Politics*, 1: 261-276. Reprinted in Henisz, W. J. (2002). *Politics and international investment:*

Measuring risk and protecting profits. London: Edward Elgar Publishers Ltd.
171. Her, M. M. (1999). Corporate governance of family-controlled publicly-traded firms: The case of Taiwanese listed firms. PhD Dissertation, Texas A&M University.
172. Herderson, A. and Fredrickson, J. (1996). Information-processing demand as a determinant of CEO compensation. *Academy of Management Journal*, 39: 575-606.
173. Hermalin, B. E. and Weisbach, M. S. (1988). The determinants of board composition. *The RAND Journal of Economics*, 19: 589-606.
174. Hermalin, B. E. and Weisbach, M. S. (2003). Boards of directors as an endogenously determined institution: A survey of the economic literature. *Economic Policy Review*, 9: 7-27.
175. Higgs, D. (2003). *Review of the role and effectiveness of non-executive directors*. Department for Trade and Industry (January).
176. Himmelberg, C., Hubbard, G., and Palia, D. (1999). Understanding the determinants of managerial ownership and the link between ownership and performance. *Journal of Financial Economics*, 53: 353-384.
177. Hiraki, T., Inoue, H., Ito, A., Kuroki, F., and Masuda, H. (2003). Corporate governance and firm value in Japan: Evidence from 1985 to 1998. *Pacific-Basin Finance Journal*, 11: 239-265.
178. Hirschman, A. O. (1970). *Exit, voice, and loyalty*, Cambridge: Harvard University Press.
179. Hitt, M. A., Hoskisson, R. E., and Ireland, R. D. (1994). A mid-range theory of the interactive effects of international and product diversification on innovation and performance. *Journal of Management*, 20: 297-326.
180. Holderness, C. G. (2003). A survey of blockholders and corporate control. *Economic Policy Review*, 9: 51-64.
181. Horiuchi, A. and Shimizu, K. (2001). Did amakudari undermine the effectiveness of regulator monitoring in Japan? *Journal of Banking and Finance*, 25: 573-596.
182. Hoshi, T., Kashyap, A., and Scharfstein, D. (1990). The role of banks in reducing the costs of financial distress in Japan. *Journal of Financial Economics*, 27: 67-88.
183. Hoshi, T. and Kashyap, A. K. (2001). *Corporate financing and governance in Japan*. Massachusetts: The MIT Press.
184. Hoskisson, R., Hitt, M., Johnson, R., and Grossman, W. (2002). Conflicting voices: The effects of institutional ownership heterogeneity and internal governance on corporate innovation strategies. *Academy of Management Journal*, 45: 697–716.
185. Hoyle, R. H. (1995). *Structural equation modelling: Concepts, issues, and applications*, Thousand Oaks, CA: Sage.
186. Hsu, S. C. (1997). Familism, professionalism and entrepreneurship – In the perspective of Chinese business firms. *Management Review*, 16: 1-9.
187. Hsu, C. C. (2003). Value relevance of stock-based employee compensation - Incentive effects and dilute effects. Master Thesis, Sun Yat-sen University, Taiwan.
188. Hu, L. T. and Bentler, P. M. (1995). Evaluating model fit. In Hoyle, R. H. (eds.), *Structural equation modeling*. Thousand Oaks, CA: Sage.

189. Hu, L. T. and Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structural analysis: Conventional criteria versus new alternatives, *Structural equation modelling*, 6: 1-55.
190. Hughes, J., Lounge, D., and Sweeney, R. (1975). Corporate international diversification and market assigned measures of risk and diversification. *Journal of Financial and Quantitative Analysis*, November: 627-637.
191. Ietto-Gillies, G. (1998). Different conceptual frameworks for the assessment of the degree of internationalization: An empirical analysis of the various indices for the top 100 transnational corporations. *Transnational Corporations*, 7: 17–39
192. Inoki, T. (1995). Japanese bureaucrats at retirement: The mobility of human resources from central government to public corporations. In Kim, H. et al., *The Japanese civil service and economic development: Catalysts of change*. Oxford: Clarendon Press.
193. Isogai, T. and Shibanuma, S. (2000). East Asia's intra- and inter-regional economic relations; data analyses on trade, direct investments and currency transactions. International Department Working Paper Series No. 00-E-4, Bank of Japan.
194. Ittner, C., Lambert, R., and Larcker, D. (2003). The structure and performance consequences of equity grants to employees of new economy firms. *Journal of Accounting and Economics*, 34: 89-127.
195. Jensen, M. C. (1989). Eclipse of the public corporation. In Oesterle, D. A. (eds.), *The law of mergers, acquisitions, and reorganizations*. St. Paul, Minnesota: West Publishing.
196. Jensen, M. C. and Meckling, W. H. (1976). Theory of the firm: Managerial behaviour, agency costs and ownership structure. *Journal of Financial Economics*, 3: 305-360.
197. Jensen, M. C. and Meckling, W. H. (1992). Knowledge, control, and organizational structure. In Werin, L. and Wijkander, H. (eds.), *Current Economics*, Oxford: Blackwell.
198. Jensen, M. C. and Murphy, K. J. (1990). Performance pay and top management incentives. *Journal of Political Economy*, 98: 225-264.
199. Joh, S. W. (1999). Strategic managerial incentive compensation in Japan: Relative performance evaluation and product market collusion. *Review of Economics and Statistics*, 81: 303-313.
200. Joh, S. W. (2003). Corporate governance and firm profitability: Evidence from Korea before the economic crisis. *Journal of Financial Economics*, 68: 287-322.
201. Johanson, J. and Mattsson, L-G. (1988). Internationalisation in industrial systems – A network approach. In Hood, N. and Vahlne, J-E. (eds.), *Strategies in global competition*. New York: Croom Helm.
202. Johanson, J. and Vahlne, J. (1977). The internationalization process of the firm - A model of knowledge development and increasing foreign market commitment. *Journal of International Business Studies*, 8: 23-32.
203. Johanson, J. and Vahlne, J. (1990). The mechanism of internationalization. *International Marketing Review*, 7: 11-24.
204. Johanson, J. and Wiedersheim-Paul, F. (1975). The internationalization of the firm - four Swedish cases. *Journal of Management Studies*, 12: 305-322.
205. Johnson, C. (1974). The reemployment of retired government bureaucrats in

Japanese big business. *Asian Survey*, 14: 953-965.
206. Johnson, C. (1978). *Japan's public policy companies*. Washington, DC: American Enterprise Institute for Public Policy Research.
207. Johnson, C. (1982). *MITI and the Japanese miracle: The growth of industrial policy, 1925-1975*. Tokyo: Charles E. Tuttle.
208. Johnson, R. A., Hoskisson, R. E., and Hitt, M. A. (1993). Board of director involvement in restructuring: The Effects of board versus managerial controls and characteristics. *Strategic Management Journal*, 14: 33-50.
209. Johnson, S. and Mitton, T. (2003). Cronyism and capital controls: Evidence from Malaysia. *Journal of Financial Economics*, 67: 351–382.
210. Jöreskog, K. G. (1967). Some contributions to maximum likelihood factor analysis. *Psychometrika*, 32: 443-482.
211. Jöreskog, K. G. (1969). A general approach to confirmatory maximum likelihood factor analysis. *Psychometrika*, 34: 183-202.
212. Jöreskog, K. G. (1973). A general method for estimating a linear structural equation system. In Goldberger, A. S. and Duncan, O. D. (eds.), *Structural equation models in the social science*, New York: Academic.
213. Jöreskog, K. G. and Goldberger, A. S. (1972). Factor analysis by generalised least squares. *Psychometrika*, 37: 243-260.
214. Jöreskog, K. G. and Lawley, D. N. (1968). New methods in maximum likelihood factor analysis. *British Journal of Mathematical and Statistical Psychology*, 21: 85-96.
215. Jöreskog, K. G. and Sörbom, D. (1984). *LISREL VI users guide*, 3rd edition, Mooresville IN: Scientific Software.
216. Joskow, P. L., Rose, N. L., Shepard, A., Meyer, J. R., and Peltzman, S. (1993). Regulatory constraints on CEO compensation. *Brookings Papers on Economic Activity, Microeconomics*, 1: 1-72.
217. Joskow, P. L., Rose, N. L., and Wolfram, C. D. (1996). Political constraints on executive compensation from the electric utility industry. *The RAND Journal of Economics*, 27: 165-182.
218. Kalt, J. P. and Zupan, M. A. (1990). The apparent ideological behaviour of legislators: Testing for principal-agent slack in political institutions. *Journal of Law and Economics*, 33: 103-131.
219. Kang, D. C. (2002). *Crony capitalism: Corruption and development in South Korea and the Philippines*. Cambridge: Cambridge University Press.
220. Kang, J. K. and Shivdasani. A (1995). Form performance, corporate governance, and top executive turnover in Japan. *Journal of Financial Economics*, 38: 29-58.
221. Kang, J. K. and Shivdasani. A (1999). Alternative mechanisms for corporate governance in Japan: An analysis of independent and bank-affiliated firms. *Pacific-Basin Finance Journal*, 7: 1-22.
222. Kaplan, D. (2000). *Structural equation modelling: Foundations and extensions*. London: Sage, London.
223. Kaplan, S. N. (1994a). Top executive rewards and firm performance: A comparison of Japan and the United States. *The Journal of Political Economy*, 102: 510-546.
224. Kaplan, S. N. (1994b). Corporate governance in Germany, Japan, and the United States: A comparison. *Research in International Business and Finance*,

12: 253-260.
225. Kaplan, S. and Minton, B. (1994). Appointments of outsiders to Japanese boards: Determinants and implications for managers. *Journal of Financial Economics*, 36: 225-258.
226. Kato, T., Kim, W., and Lee, J. H. (2004). Executive compensation, firm performance and chaebols in Korea: Evidence from new panel data. Working Paper.
227. Kato, T. and Kubo, K. (2006). CEO compensation and firm performance in Japan: Evidence from new panel data on individual CEO pay. *Journal of the Japanese and International Economies*, 20: 1-19.
228. Kato, T. and Long, C. (2004). Executive compensation, firm performance, and state ownership in China: Evidence from new panel data. *William Davidson Institute Working Paper*.
229. Kato, T. and Rockel, M. (1992). Experiences, credentials and compensation in the Japanese and US managerial labor markets: Evidence from new micro data. *Journal of Japanese International Economies*, 6: 30–51.
230. Keehn, E. (1990). Managing interests in the Japanese bureaucracy: Informality and discretion. *Asian Survey*, 30: 1021-1037.
231. Keesling, J. W. (1972). Maximum likelihood approaches to causal analysis. Unpublished Ph.D. thesis, University of Chicago.
232. Keohane, R. O and Milner, H. V. (1996). *Internationalization and domestic politics*, Cambridge: Cambridge University Press.
233. Kesner, I. F. (1988). Directors characteristics and committee membership: An investigation of type, occupation, tenure, and gender. *The Academy of Management Journal*, 31: 66-84.
234. Kim, W. C., Hwang, P., and Burgers, W. P. (1993). Multinationals diversification and the risk-return trade-off. *Strategic Management Journal*, 14: 275-286.
235. Kilne, R. B. (1998). *Principles and practice of structural equation modelling*. New York: Guilford Press.
236. Kochhar R. and David, P. (1996). Institutional investors and firm innovation: A test of competing hypotheses. *Strategic Management Journal*, 17: 73-84.
237. Kodate, H. and Takechi, N. (2005). Japan. In *Supplement – The 2005 guide to corporate governance*. London: International Financial Law Review.
238. Kojima, K. (2000). The flying geese model of Asian economic development: Origin, theoretical extensions, and regional policy implications. *Journal of Asian Economics*, 11: 375-401.
239. Kole, S. R. (1996). Managerial incentives and firm performance: Incentives or rewards? *Advances in Financial Economics*, 2: 119–149.
240. Kole, S. R. (1997). The complexity of compensation contracts. *Journal of Financial Economics*, 43: 79-104.
241. Kole, S. R. and Mulherin, J. H. (1997). The government as a shareholder: A case from the United States. *Journal of Law and Economics*, 1997, 40: 1-22.
242. Koopmans, T. C., Rubin, H., and Leipnik, R. B. (1950). Measuring the equation systems of dynamic economics. In Koopmans, T. C. (eds.), *Statistical inference in dynamic economic models*. New York: Wiley.
243. Kubo, K. (2003). The determinants of executive compensation in Japan and the UK: Agency hypothesis or joint determination hypothesis? In Fan, J., Teranishi,

J., and Hanazaki, M. (eds.), *Designing financial systems in East Asia and Japan.* New York: Routledge.
244. Kubo, K. (2005). Executive compensation policy and company performance in Japan. *Corporate Governance: An International Review*, 13: 429-436.
245. Kuji, T. (1998). *The bureaucrats kingdom: Japans downfall (Kanryo kokka nippon no botsuraku)*. Tokyo: Hihyosha.
246. La Porta, R., Lopez-de-Silanes, F., Shleifer, A., and Vishny, R. (1996). Law and finance. NBER Working Paper No. 5661.
247. La Porta, R. Lopez-de-Silanes, F., Shleifer, A., and Vishny, R. (1997). Legal determinants of external finance. *Journal of Finance*, 52: 1131-1150.
248. La Porta, R., Lopez-de-Silanes, F., and Shleifer, A. (1999). Corporate ownership around the world. *Journal of Finance*, 54: 471-517.
249. La Porta, R., Lopez-de Silanes, F., and Shleifer, A. (2000). Investor protection and corporate governance. *Journal of Financial Economics*, 58: 3-27.
250. La Porta, R., Lopez-de Silanes, F., and Shleifer, A. (2002). Government ownership of banks. *Journal of Finance*, 57: 265-300.
251. Lambert, R., Larcker, D., and Verrecchia, R. (1991). Portfolio considerations in valuing executive compensation. *Journal of Accounting Research*, 29: 129-149.
252. Lambert, R., Larcker, D., and Weigelt, K. (1993). The structure of organizational incentives. *Administrative Science Quarterly*, 38: 438-461.
253. Lambert, R. and Larcker, D. (2002). Stock options, restricted stock, and incentives. Working Paper, University of Pennsylvania.
254. Lang, L. and Stulz, R. (1994). Tobins Q, corporate diversification, and firm performance. *Journal of Political Economy*, 102: 1248-1280.
255. Lawrence, R. Z. (1991). Efficient or exclusionist? The import behaviour of Japanese corporate groups. *Brooking Papers on Economic Activity*, 1991: 311-341.
256. Lecraw, D. J. (1996). Indonesia: The critical role of government. In Dunning, J. H. and R. Narula. (eds.), *Foreign direct investments and governments: Catalysts for economic restructuring*. London: Routledge.
257. Lee, T. S. and Yeh, Y. H. (2004). Corporate governance and financial distress: Evidence from Taiwan. *Corporate Governance: An International Review*, 12: 378-388.
258. Lewellen, W. and Loderer, C., and Martin, K. (1987). Executive compensation and executive incentive problems: An empirical analysis. *Journal of Accounting and Economics*, 9: 287-310.
259. Lin, Y. F. (2005). Corporate governance, leadership structure and CEO compensation: Evidence from Taiwan. *Corporate Governance: An international Review*, 13: 824-835.
260. Lins, K. V. (2003). Equity ownership and firm value in emerging markets. *Journal of Financial and Quantitative Analysis*, 38: 159-184.
261. Lopéz, E. J. and Ramírez, C. D. (2000). Is political ideology endogenous? Evidence from business cycle. Working Paper.
262. Luo, Y. (1999). Dimensions of knowledge: Comparing Asian and Western MNEs in China. *Asia Pacific Journal of Management*, 16: 75–93.
263. Ma, T. and Yu, H. Y. (2003) How does power shift affect board composition and firm performance? The 10th Global Finance Conference and the 11th Conference on the Theories and Practices of Securities and Financial Markets.

264. Mahmood, I. P. and Rufin, C. (2005). Governments dilemma: The role of government in imitation and innovation. *The Academy of Management Review*, 30: 338-360.
265. Mahoney, J. T. and Pandian, R. J. (1992). The resource-based view within the conversation of strategic management. *Strategic Management Journal*, 13: 363-380.
266. Main, Brian. G. M. (2003). The ABI guidelines for share-based incentive schemes: Setting the hurdle too high? Working Paper, The University of Edinburgh.
267. Main, Brian. G. M. (2004). A review of some questions on executive pay. Working Paper, NYU/LSE Corporate Governance Conference, London School of Economics, November 4/5.
268. Main, Brian G. M., Bruce, A., and Buck, T. (1996). Total board remuneration and company performance. *The Economic Journal*, 106: 1627-1644.
269. Main, Brian G. M. and Johnston J. (1993). Remuneration committees and corporate governance. *Accounting and Business Research*, 23: 351-362.
270. Main, Brian G. M., OReilly III, C. A., and Wade, J. (1995). The CEO, the board of directors, and executive compensation: Economic and psychological perspectives. *Industrial and Corporate Change*, 4: 293-332.
271. Mak, Y. T. and Li, Y. (2001). Determinants of corporate ownership and board structure: Evidence from Singapore. *Journal of Corporate Finance*, 7: 235–256.
272. Makinson, L. (1990). *Open secrets: The dollar power of PACs in Congress*, Washington DC: Congressional Quarterly, Inc.
273. Mallin, C. A. (2004). *Corporate governance*, Oxford: Oxford University Press.
274. Mascarenhas, B. (1989). Domains of state-owned, privately held, and publicly traded firms in international competition. *Administrative Science Quarterly*, 34: 582-589.
275. Matsunaga, S. R. (1995). The effects of financial reporting costs on the use of employee stock options. *Accounting Review*, 70: 1-26.
276. Mazzolini, R. (1980a). Government-controlled enterprises: What's the difference? *Columbia Journal of World Business*, 15: 28-37.
277. Mazzolini, R. (1980b). The international strategy of state-owned firms: An organizational process and politics perspective. *Strategy Management Journal*, 1: 101-118.
278. McConnell, J. J. and Servaes, H. (1990). Additional evidence on equity ownership and corporate value. *Journal of Financial Economics*, 27: 595-612.
279. Mehran, H. (1992). Executive incentive plans, corporate control, and capital structure. *Journal of Financial and Quantitative Analysis*, 27: 539-560.
280. Mehran, H. (1995). Executive compensation structure, ownership and firm performance. *Journal of Financial Economics*, 38: 163-184.
281. Megginson, W. L. and Netter, J. M. (2001). From state to market: A survey of empirical studies on privatisation. *Journal of Economic Literature*, 39: 321-389.
282. Miyamoto, M. (1995). *Straitjacket society: An insiders irreverent view of bureaucratic Japan*. Tokyo: Kodansha International.
283. Monks, R. A. G. and Minow, N. (2004). *Corporate governance*. 3rd edition, Oxford: Blackwell Publishing Ltd.
284. Moon, C. W. and Lado, A. A. (2000). MNC-host government bargaining power relationship: A critique and extension within the resource-based view. *Journal of*

Management, 26: 85–117.
285. Morck, R. and Nakamura, M. (1999). Banks and corporate control in Japan. *Journal of Finance*, 54: 319-339.
286. Morck, R., Nakamura, M., and Shivdanasi, A. (2000). Banks, ownership structure, and firm value in Japan. *The Journal of Business*, 73: 539-567.
287. Mueller, D. C. (2006). The Anglo-Saxon approach to corporate governance and its applicability to emerging markets. *Corporate Governance: An International Review*, 14: 207-219.
288. Murphy, K. J. (1999). Executive compensation. In Ashenfelter, O. C. and Layard, R. (eds.), *Handbook of labour economics*, 3. Amsterdam: North-Holland.
289. Muthén B. O. (1978). Contributions to factor analysis of dichotomous variables. *Psychometrika*, 43: 551-560.
290. Muthén B. O. (1984). A general structural equation model with dichotomous, ordered categorical and continuous latent variable indicators. *Psychometrika*, 49: 115-132.
291. Muthén B. O. and Kaplan, D. (1985). A comparison of some methodologies for the factor analysis of non-normal Likert variables. *British Journal of Mathematical and Statistical Psychology*, 38: 171-189.
292. Muthén B. O. and Kaplan, D. (1992). A comparison of some methodologies for the factor analysis of non-normal Likert variables: A note on the size of the model. *British Journal of Mathematical and Statistical Psychology*, 45: 19-30.
293. National Association of Corporate Directors (1996). *NACD blue ribbon commission report on director professionalism.* Washington, DC: NACD Corporate Directors Institute.
294. Norburn, D., Boyd, B. K., Fox, M., and Muth, M. (2000). International corporate governance reform. *European Business Journal*, 12: 116–133.
295. Numazaki, I. (1993). The tainanbang: The rise and growth of a banana-bunch-shaped business group in Taiwan. *Developing Economies*, 31: 485-510.
296. Odagiri, H. (1992). *Growth through competition, competition through growth.* New York: Oxford University Press.
297. Okazaki, T. and Okuno-Fujiwara, M. (1997). Evolution of economic systems: The case of Japan. Working paper No. 444, Osaka-Institute of Social and Economic Research.
298. OReilly, C. A., Main, Brian. G. M., and Crystal, G. S. (1988). CEO compensation as tournament and social comparison: A tale of two theories. *Administrative Science Quarterly*, 33: 257-274.
299. Palia, D. (2001). The endogeneity of managerial compensation in firm valuation: A solution. *Review of Financial Studies*, 14: 735-764.
300. Pananond, P. and Zeithaml, C. P. (1998). The international expansion process of MNEs from developing countries: A case study of Thailand's CP group. *Asia Pacific Journal of Management*, 15: 163-184.
301. Pang, E. F. (1995). Staying global and going regional: Singapore's inward and outward direct investments. In Nomura Research Institute and Institute of Southeast Asian Studies, *The new wave of foreign direct investment in Asia.* Singapore: Institute of Southeast Asian Studies.
302. Pangarkar, N. (1998). The Asian multinational corporation: Strategies,

performance and key challenges. *Asia Pacific Journal of Management*, 15: 109-118.
303. Pearce J. A. and Zahra, S. A. (1992). Board composition from a strategic contingency perspective. *Journal of Management Studies*, 29: 411-439.
304. Peck, S. I. and Ruigrok, W. (2002). Corporate governance and executive incentives in Germany. Working paper, University St. Gallen.
305. Perry, T. and Peyer, U. C. (2005). Board seat accumulation by executives: A shareholders perspective. *Journal of Finance*, 60: 2083-2123.
306. Pindyck, R. and Rubinfeld, D. (1998). *Econometric models and economic forecasts*. Singapore: McGraw-Hill.
307. Poole, K. T., and Rosenthal H. (1996). Are legislators ideologues or the agents of constituents? *European Economics Review*, 40: 707-717.
308. Porter, M. E., Takeuchi, H., and Sakakibara, M. (2000). *Can Japan compete?* London: Macmillan Press Ltd.
309. Poynter, T. A. (1985). *Multinational enterprises and government intervention*, New York: St. Martins Press.
310. Prowse, S. D. (1990). Institutional investment patterns and corporate financial behavior in the United States and Japan. *Journal of Financial Economics*, 27: 43-66.
311. Prowse, S. D. (1992). The structure of corporate ownership in Japan. *Journal of Finance*, 47: 1121-1140.
312. Prowse, S. D. (1994). Corporate governance in an international perspective: A survey of corporate control mechanisms among large firms in the United States, the United Kingdom, Japan, and Germany. BIS Economic Papers No.41, Bank for International Settlements.
313. Qi, D., Wu, W., and Zhang, H. (2000). Shareholding structure and corporate performance of partially privatized firms: Evidence from listed Chinese companies. *Pacific-Basin Finance Journal*, 8: 587-610.
314. Raghuram, G. and Zingales, L. (1998). Which capitalism? Lessons from the East Asia crisis. *Journal of Applied Corporate Finance*, Fall: 40-48
315. Ramaswamy, K., Kroeck, G. K., and Renforth, W. (1996). Measuring the degree of internalization of a firm: A comment. *Journal of International Business Studies*, 27: 167-177.
316. Razin A. and Rose, A. (1994). Business cycle volatility and openness: An exploratory cross-section analysis. NBER Working Papers No. 4208, National Bureau of Economic Research.
317. Rebick, M. E. (2000). The importance of networks in the market for university graduates in Japan: A longitudinal analysis of hiring patterns. *Oxford Economic Papers*, 52: 471-496.
318. Rediker, K. J. and Seth, A. (1995). Boards of directors and substitution effects of alternative governance mechanisms. *Strategic Management Journal*, 16: 85-99.
319. Ronen, S. and Shenkar, O. (1985). Clustering countries on attitudinal dimensions: A review and synthesis. *Academy of Management Review*, 10: 435-454.
320. Romu Gyosei Kenkyu Jo (Centre for Labour Policy) (1998). *Rosei Jiho (Report on Labour Policy) No. 2905*. Tokyo: Romu Gyosei Kenkyu Jo.
321. Roth, K. and O'Donnell, S. (1996). Foreign subsidiary compensation strategy:

An agency theory perspective. *Academy of Management Journal*, 39: 678-703.
322. Roy, D. (2003). *Taiwan: A political history*. Ithaca, New York: Cornell University Press.
323. Rugman, A. M. and Verbeke, A. (1998a). Multinational enterprises and public policy. *Journal of International Business Studies*, 29: 115–136.
324. Rugman, A. M. and Verbeke, A. (1998b). Corporate strategy and international environmental policy. *Journal of International Business Studies*, 29: 819–834.
325. Ruigork, W. and Wagner, H. (2003). Internationalization and performance: An organizational learning perspective. *Management International Review*, 43: 63-83.
326. Sanders, W. G. and Carpenter, M. A. (1998). Internationalization and firm governance: The roles of CEO compensation, top team compensation, and board structure. *Academy of Management Journal*, 41: 158-178.
327. Santa-Clara, P. and Valkanov, R. (2003). The presidential puzzle: Political cycles and the stock market. *Journal of Finance*, 58: 1841-1872.
328. Sapienza, P. (2004). The effects of government ownership on bank lending. *Journal of Financial Economics*, 72: 357-384.
329. Sarkar J. and Sarkar, S. (2000). Large shareholder activism in corporate governance in developing countries: Evidence from India. *International Review of Finance*, 1: 161-194.
330. Schaede, U. (1992). Corporate governance in Japan: Institutional investors, management monitoring and corporate stakeholders. CCC Working Paper No. 92-12, University of California at Berkley.
331. Schaede, U. (1994). Understanding corporate governance in Japan: Do classical concepts apply? *Industrial and Corporate Change*, 3: 285-323.
332. Schaede, U. (1995). The old boy network and government-business relationships in Japan. *Journal of Japanese Studies*, 21: 293-317.
333. Schipani, C. A. and Liu, J. (2001). Corporate governance in China: Then and now. William Davidson Institute Working Papers Series, No. 407, University of Michigan.
334. Schuler, D. A. (1996). Corporate political strategy and foreign competition: The case of the steel industry. *Academy of Management Journal*, 39: 720–737.
335. Schumacker, R. and Lomax, R. (2004). *A beginners guide to structural equation modelling*, 2nd edition. New Jersey: Lawrence Erlbaum Associates.
336. Securities and Futures Institute (2005). *Corporate governance in Taiwan*. Taipei: Securities and Futures Institute.
337. Sesil, J. C., Kroumova, M. K., Blasi, J., and Kruse, D. L. (2002). Broad-based employee stock options in US new economy firms. *British Journal of Industrial Relations*, 40: 273-294.
338. Sheard, P. (1989). The main bank system and corporate monitoring and control in Japan. *Journal of Economic Behavior and Organization*, 11: 399-422.
339. Sheard, P. (1991). Delegated monitoring among delegated monitors: Principal-agent aspects of the Japanese main bank system. CEPR publication 274, Centre for Economic Policy Research, Stanford University.
340. Sheard, P. (1992). Stable shareholdings, corporate governance, and the Japanese Firm, Research Papers No. 281, Osaka-Institute of Social and Economic Research.
341. Sheard, P. (1994). Bank executives on Japanese corporate boards. *Monetary and*

Economics Studies, 12: 85-121.
342. Sherman, H. D., Kashlak, R. J., and Joshi, M. P. (1998). The effect of the board and executive committee characteristics on the degree of internationalization. *Journal of International Management*, 4: 311-335.
343. Shivdasani A., and Yermack, D. (1999). CEO involvement in the selection of new board members: An empirical analysis. *Journal of Finance*, 54: 1829-1853.
344. Shleifer, A. (1998). State versus private ownership. *Journal of Economic Perspectives*, 12: 133-150.
345. Shleifer, A. and Vishny, R. (1994). Politicians and firms. *Quarterly Journal of Economics*, 109: 995-1025.
346. Shleifer, A. and Vishny, R. W. (1997). A survey of corporate governance. *Journal of Finance*, 52: 737-783.
347. Shleifer, A. and Vishny, R. W. (1998). *The grabbing hand: Government pathologies and their cures*. London: Harvard University Press.
348. Sim, A. B. and Pandian, J. R. (2003). Emerging Asian MNEs and their internationalization strategies – Case study evidence on Taiwanese and Singaporean firms. *Asia Pacific Journal of Management*, 20: 27–50.
349. Smith, H. (2000). The state, banking and corporate relationships in Korea and Taiwan. In Drysdale, P. (eds.), *Reform and recovery in East Asia: The role of the state and economic enterprise*. New York: Routledge.
350. Smith, C. and Watts, R. (1992). The investment opportunity set and corporate financing, dividend, and compensation policies. *Journal of Financial Economics*, 32: 263-292.
351. Solomon, J. F., Lin, S. W., Norton, S. D., and Solomon, A. (2003). Corporate governance in Taiwan: Empirical evidence from Taiwanese company directors. *Corporate Governance: An International Review*, 11: 235-248.
352. Suganuma, U. (1995). The state structure nexus between Japan and China: Are these "unique", "mystical" systems? *Asian Journal of Public Administration*, 17: 267-301.
353. Sullivan, D. (1994). Measuring the degree of internationalization of a firm. *Journal of International Business Studies*, 25: 325-342.
354. Sun, Q. and Tong, W. H. S. (2002). China share issue privatization: The extent of its success. *Journal of Financial Economics*, 70: 183-222.
355. Sun, Q., Tong, W. H. S., and Tong, J. (2002). How does government ownership affect firm performance? Evidence from Chinas privatization experience. *Journal of Business Finance and Accounting*, 29: 1-27.
356. Sundaramurthy, C., Mahoney, J. M., and Mahoney, J. T. (1997). Board structure, anti-takeover provisions, and stockholder wealth. *Strategic Management Journal*, 18: 231-245.
357. Tallman, S. B. (1988). Home country political risk and foreign direct investment in the United States. *Journal of International Business Studies*, 19: 219-234.
358. Tallman, S. and Fladmoe-Lindquist, K. (1994). Resource-based strategy and competitive advantage among multinationals. In Shrivastava, P. and Huff, A. (eds.), *Advances in strategic management: Interorganizational relations and international strategies*, 10A. Greenwich, CT: JAI Press Inc.
359. Tallman, S. and Li, J. T. (1996). Effects of international diversity and product diversity on the performance of multinational firms. *The Academy of Management Journal*, 39: 179-196.

360. Tan, C. H. (1995). *Venturing overseas: Singapore's external wing*. Singapore: McGraw Hill.
361. Thomsen, S. and Pedersen, T. (2000). Ownership structure and economic performance in the largest European companies. *Strategic Management Journal*, 21: 689–705.
362. Tien, H. M. (1992). Transformation of an authoritarian party state: Taiwan's development experience. In Cheng, T. J. and Haggard, S. (eds.), *Political change in Taiwan*. London: Lynne Rienner Publishers.
363. Tihanyi, L., Ellstrand, A. E., and Daily, C. M. (2000). Composition of the top management team and firm international diversification. *Journal of Management*, 26: 1157-1177.
364. Tihanyi, L., Johnson. R. A., Hoskisson R. E., and Hitt, M. A. (2003). Institutional ownership differences and international diversification: The effects of boards of directors and technological opportunity. *Academy of Management Journal*, 46: 195-211.
365. Tolentino, P. E. E. (1993). *Technological innovation and third world multinationals*. London: Routledge.
366. Tosi, H. L., Werner, P., and Gomez-Mejia, L. R. (2000). How much does performance matter? A meta-analysis of CEO pay studies. *Journal of Management*, 26: 301-339.
367. Tsuruta, T. (1984). The rapid growth era. In Komiya, R., Okuno, M., and Suzukmura, K. (eds.) *Nihon no sangyo seisaku (Industrial policy of Japan)*. Tokyo: University of Tokyo Press.
368. UNCTAD (1997). Transnational corporations, market structure and competition policy. *World investment report 1997*. Geneva: United Nations.
369. UNCTAD (1998). Trends and determinants. *World investment report 1998*. Geneva: United Nations.
370. UNCTAD (1999). Foreign direct investment and the challenge of development. *World Investment Report 1999*. Geneva: United Nations.
371. Ursacki, T. (1994). CEO succession in Japan: Who gets to the top and why? *Best Papers Proceedings*. Vancouver: Association of Japanese Business Studies Meeting.
372. Van Hoesel, R. (1996). Taiwan: Foreign direct investment and the transformation of the economy. In Dunning, J. H. and Narula, R. (eds.), *Foreign direct investment and governments*. London: Routledge.
373. Van Hoesel, R. (1999). *New multinational enterprises from Korea and Taiwan*. London: Routledge.
374. Van Rixtel, A. and Hassink, W. H. J. (2002). Monitoring the monitors: Are old boys networks being used to monitor Japanese private banks? *Journal of Japanese and International Economics*, 16: 1-30.
375. Van Rixtel. A. (2002). *Informality and monetary policy in Japan*. Cambridge: Cambridge University Press.
376. Vernon, R. (1966). International investment and international trade in the product cycle. *Quarterly Journal of Economics*, 80: 190-207.
377. Vining, A. R. and Boardman, A. E. (1992). Ownership versus competition: Efficiency in public enterprise. *Public Choice*, 73: 205-239.
378. Watts, R. and Zimmerman, J. (1978). Towards a positive theory of the determination of accounting standards. *Accounting Review*, 53: 112-134.

379. Webb, T. (2006). Is Asian corporate governance improving? *Ethical Corporation*, May: 25-26.
380. Weisbach, M. S. (1988). Outside directors and CEO turnover. *Journal of Financial Economics*, 20: 431-460.
381. Welch, L. S. and Loustarinen, R. (1988). Internationalization: Evolution of a concept. *Journal of General Management*, 14: 34–55.
382. Wells, T. L. (1968). A product life cycle for international trade? *Journal of Marketing*, 32: 1-6.
383. Werner, S. (2002). Recent developments in international management research: A review of 20 top management journals. *Journal of Management*, 28: 277-305.
384. West, S. G., Finch, J. F., and Curran, P. J. (1995). Structural equation models with non-normal variables: Problems and remedies. In Hoyle, R. H. (eds.), *Structural equation modeling*, Thousand Oaks, CA: Sage.
385. Westphal, J. D. (1998). Board games: How CEOs adapt to increases in structural board independence from management. *Administrative Science Quarterly*, 43: 511-537.
386. Westphal, J. D. (1999). Collaboration in the boardroom: Behavioral and performance consequences of CEO-board social ties. *Academy of Management Journal*, 42: 7-24.
387. Westphal, J. D. and Zajac, E. J. (1994). Substance and symbolism in CEOs long-term plans. *Administrative Science Quarterly*, 39: 367-390.
388. Westphal, J. D. and Zajac, E. J. (1995). Who shall govern? CEO/board power, demographic similarity, and new director selection. *Administrative Science Quarterly*, 40: 60-83.
389. Wiersema, M. and Bird, A. (1993). Organizational demography in Japanese firms: Group heterogeneity, individual dissimilarity, and top management team turnover. *The Academy of Management Journal*, 36: 996-1025.
390. Wiley, D. E. (1973). The identification problem in structural equation models with unmeasured variables. In Goldberger, A. S. and Duncan, O. D. (eds.), *Structural equation models in the social sciences*, New York: Academic Press.
391. Wiwattanakantang, Y. (2001). Controlling shareholders and corporate value: Evidence from Thailand. *Pacific-Basin Finance Journal*, 9: 323-362
392. Wright, S. (1918). On the nature of size factors. *Genetics*, 2: 367-374.
393. Wright, S. (1921). Correlation and causation. *Journal of Agriculture Research*, 20: 557-585.
394. Wright, S. (1934). The method of path coefficients. *Annals of Mathematical Statistics*, 4: 161-215.
395. Xu, P. (1997). Executive salaries as tournament prizes and executive bonuses as managerial incentives in Japan. *Journal of the Japanese and International Economies*, 11: 319-346.
396. Yamori, N. (1998). Bureaucrat-managers and corporate governance: Expense-preference behaviours in Japanese financial institutions. *Economics Letters*, 61: 385-389.
397. Yao, S. (1997). Profit sharing bonus payment and productivity: A case study of Chinese state-owned enterprises. *Journal of Comparative Economics*, 24: 281-296.
398. Yeh, Y. H., Chou, H. B., and Chang, M. H. (1999). Turnover of fund managers, board composition and performance. *Review of Securities and Futures Markets*,

11: 25-60.
399. Yeh, Y. H., Lee, T. S., and Woidtke, T. (2001). Family control and corporate governance: Evidence from Taiwan. *International Review of Finance*, 2: 21-48.
400. Yeh, Y. H., Lee, T. S., and Ko, C. E. (2002). *Corporate governance and rating system*. Taiwan: Sunbright Publishing.
401. Yermack, D. (1995). Do corporations award CEO stock options effectively? *Journal of Financial Economics*, 39: 237-269.
402. Yermack, D. (1996). Higher market valuation of companies with a small board of directors. *Journal of Financial Economics*, 40: 185-211.
403. Zajac, E. J. and Westphal, J. D. (1994). The costs and benefits of managerial incentives and monitoring in large U.S. corporations: When is more not better? *Strategic Management Journal*, 15: 121-142.
404. Zajac, E. J. and Westphal, J. D. (1996). Director reputation, CEO-board power, and the dynamics of board interlocks. *Administrative Science Quarterly*, 41: 507-529.
405. Zutshi, R. K. and Gibbons, P. T. (1998). The internationalization process of Singapore government-linked companies: A contextual perspective. *Asia Pacific Journal of Management*, 15: 219–246.

Appendix 1: Summary of the Institutional Framework of Corporate Governance in Japan

The legal system in Japan is characterised by a codified style. Japan is based on civil law rather than common law. Common law is established by judges and then incorporated into legislature. Common law originally developed in England from judicial decisions that were based in tradition, custom, and precedent. Civil law is a codified system of law that establishes a comprehensive system of rules that are applied and interpreted by judges. The civil law system is the basis of the law in many countries, especially in continental Europe. Corporate governance practices in Japan are governed by applicable laws, specifically the Commercial Code and the "Law Related to Special Exceptions to the Commercial Code Concerning Audits, etc. of Joint Stock Corporations". La Porta et al. (1997) find that countries with civil law are significantly related to weaker investor protection compared with countries with common law. Compared with the US and the UK, investor protection in Japan is weaker (Solomon, et al., 2003). Therefore, in 2001, an amendment was made to the Japanese Commercial Code whereby statutory auditors were given more power and independence in their corporations. In 2002, the Diet made another amendment to the Commercial Code whereby a committee system was introduced as an alternative to the traditional statutory auditor system of corporate governance (Figure 2-2). Subsequently, on June 29th, 2005, the Diet passed a new Corporation Law that was intended to modernise Japanese corporate law and will come into effect in 2006 (Kodate, 2005).

Some Japanese companies are registered with the Securities and Exchange Commission (SEC) in the US. Foreign companies that have conducted a registered public offering in the US under the Securities Act of 1933, or have registered a class of equity securities under the Securities Exchange Act of 1934 are generally subject to many reporting requirements of the Exchange Act as foreign private issuers (FPI). Historically, the Securities and Exchange Commission (SEC) in the US exempted FPI from many of the reporting and disclosure requirements of the Exchange Act. However, many provisions of the Sarbanes-Oxley Act are directly applicable to

FPI[191]. Both the New York Stock Exchange (NYSE) and NASDAQ enacted amendments to their listing standards, which have significant influence on foreign companies.

Following the enactment of Sarbanes-Oxley, the New York Stock Exchange (NYSE) significantly enhanced their corporate governance rules for listed companies to comply with the requirements of the Sarbanes-Oxley Act. Most Japanese securities, which are registered with the Securities and Exchange Commission (SEC), are listed on the New York Stock Exchange (NYSE). Therefore, they are subject to those corporate governance requirements that are applicable to NYSE listed non-US companies. According to the NYSE listing regulations, which are codified in Section 303A[192] of the NYSE Listed Company Manual, NYSE listed non-US companies may, in general, follow their home country corporate governance practices in lieu of most of the new NYSE corporate governance requirements. NYSE Section 303A.11 requires that non-US companies must disclose the significant difference between their corporate governance practices and the corporate governance practices of US companies under NYSE listing standards. By observing these differences between Japanese corporate governance practices and NYSE standards for listed companies, we find that there is a big difference between Japan and the US in board structure and the level of disclosure. In Table 2-2, we will describe the difference according to the order of rules.

[191] The SEC has used its authority to limit or modify the application of some requirements to foreign companies.

[192] 303A General Application: Companies listed on the Exchange must comply with certain standards regarding corporate governance as codified in this Section 303A. Consistent with the NYSE's traditional approach, as well as the requirements of the Sarbanes-Oxley Act of 2002, certain provisions of Section 303A are applicable to some listed companies but not to others.

Table A1-1The differences between Japanese corporate governance practices and NYSE standards for non-US listed companies

NYSE Standards for US Companies under Listed Company Manual Section 303A	Japanese Corporate Practices
NYSE Section 303A.01: A NYSE-listed company must have a majority of independent directors on its board of directors. Requiring a majority of independent directors will increase the quality of board oversight and lessen the possibility of damaging conflicts of interest	Since April 2003, large Japanese companies have been permitted to choose between the traditional statutory auditor system and the committee system. However, most Japanese companies have adopted the statutory auditor system rather than the committee system. Under the Commercial Code, when a company adopts the statutory auditor system, the company is not required to have any independent director on its board. However, according to the amendment of the "Law Related to Special Exceptions to the Commercial Code Concerning Audits, etc. of Joint Stock Corporations", which was applicable from 1st May, 2005, large Japanese companies[193] are required to have at least 50% of statutory auditors to be outside statutory auditors (§18) who must meet independence requirements under Japan's Commercial Code.
NYSE Section 303A.02 establishes general standards to evaluate directors' independence (no director qualifies as independent unless the board of directors affirmatively determines that the director has no material relationship with the listed company directly or being a partner, shareholder or officer of an organization that has a relationship with the listed company).	The Commercial Code in Japan has no independence requirement for directors because a company using the statutory auditor system is not required to have any independent directors on its board under the Commercial Code. According to the amendment of the "Law Related to Special Exceptions to the Commercial Code Concerning Audits, etc. of Joint Stock Corporations", which was applicable from May 1st, 2005, the independence requirement with respect to outside statutory

[193] In Japan, large companies are defined under the Commercial Code if it has either (a) issued share capital of ¥500 millions or more, or (b) liabilities of ¥20 billions or more.

	auditors has been enhanced. The outside auditor must not have served as a director or an employee of the company or any of its subsidiaries (Before the amendment, the outside auditor must not have served as a director or an employee of the company or any of its subsidiaries the last five years prior to the appointment).
NYSE Section 303A.03: To empower non-management directors to serve as a more effective check on management, the non-management directors of each company must meet at regularly scheduled executive sessions without management.	Laws in Japan do not contain such a requirement.
NYSE Section 303A.04: Listed companies shall have a nominating/corporate governance committee comprised entirely of independent directors which shall have a written charter establishing certain minimum responsibilities as set forth in **NYSE Section 303A.04 (b) (i)** and providing for an annual evaluation of the committee's performance.	Laws in Japan do not contain such a requirement. Japanese companies can choose to use the traditional auditor system or the committee system. If they choose to use the traditional auditor system, there is no need to have a nominating/corporate governance committee. Some companies, such as SONY, choose to use the committee system, which requires companies to have three committees composed of a majority of outside directors.
NYSE Section 303A.05 (a): Listed companies shall have a compensation committee comprised entirely of independent directors.	For companies that adopt the committee system, directors', auditors' and CEO compensation will need to be approved by the compensation committee. For companies without committees on the board, according to Articles of Incorporation, directors', auditors' and CEO compensation are proposed by directors themselves. The total amounts of compensation for the directors, statutory auditors, and CEO are approved on the annual general shareholders' meeting (AGM)[194].

[194] Kato and Kubo (2006) and Kubo (2003, 2005) indicate that the proposed compensation for directors, auditors, and CEO are usually rubber-stamped by the annual general meeting of shareholders. Therefore, the sensitivity of CEO compensation to firm performance is weak in Japan (Kato and Kubo, 2006).

NYSE Section 303A.06: Listed companies must have an audit committee that satisfies the requirements of Rule 10A-3 under the Securities Exchange Act of 1934 (the Exchange Act). Foreign private issuers must satisfy the requirements of Rule 10A-3 under the Exchange Act by July 31, 2005.	As discussed above, most Japanese companies have adopted the statutory auditor system. Under this system, the board of statutory auditors is a legally separate and independent body from the board of directors. The function of the board of statutory auditors is similar to that of the audit committee. Therefore, the laws in Japan do not require listed companies to establish an audit committee. However, large Japanese companies are required to have at least three statutory auditors[195]. Each statutory auditor serves a four-year term[196]. An auditor may not serve concurrently as a director or an employee of the company or its subsidiaries[197].
NYSE Section 303A.07 (a): The audit committee shall consist of at least three members. All of its members shall be financially literate or must acquire such financial knowledge within a reasonable period and at least one of its members shall have experience in accounting or financial administration.	
NYSE Section 303A.07 (a): If a member of the audit committee is simultaneously a member of the audit committee of more than three public listed companies, and the listed company does not limit the number of audit committees on which its members may serve, then, in each case the board shall determine whether the simultaneous service would prevent such a member from effectively serving on the listed company's audit committee, and shall report its decision in the annual proxy statement of the company or in the company's annual report on Form 10-K filed with the SEC.	
NYSE Section 303A.07 (c): The audit committee should have a written charter establishing the duties and responsibilities of its members, including the duties and responsibilities required, at a minimum, by Section 10A-3(b)(1) of the Exchange Act.	The laws in Japan do not require listed companies to establish an audit committee.
NYSE Section 303A.07(c) (iii) (B) and (C): The two Acts establish audit committee objectives.	The laws in Japan do not require listed companies to establish an audit committee.

[195] "Law Related to Special Exceptions to the Commercial Code Concerning Audits, etc. of Joint Stock Corporations", Article 18
[196] Commercial Code, Article 273
[197] "Law Related to Special Exceptions to the Commercial Code Concerning Audits, etc. of Joint Stock Corporations", Article 18 (4)

NYSE Section 303A.07(c) (iii) (G): Provides that the audit committee should establish clear policies for hiring external auditor's employees.	The laws in Japan do not require listed companies to establish an audit committee.
NYSE Section 303A.07 (d): Provides that each company must have an internal audit function in order to provide to the management and to the audit committee permanent assessments on the company's risk management processes and internal control system.	The statutory auditors in Japan play the role of internal audit.
NYSE Section 303A.08: Shareholders must be given the opportunity to vote on all equity based compensation plans and material revisions thereto with certain exceptions.	Pursuant to the Commercial Code in Japan, if a company desires to adopt an equity compensation plan under which stock acquisition rights are granted on specially favourable conditions (except where such rights are granted to all of its shareholders on a *pro rata* basis), the company must approve the plan by a special resolution of a AGM, where the quorum is one-third of the total number of voting rights and the approval of at least two-thirds of the voting rights represented at the meeting is required.
NYSE Section 303A.09: Companies must adopt and disclose corporate governance guidelines, including several issues for which such reporting is mandatory, and include such information on the company's website, which should also include the charters of the audit committee, the nominating committee, and the compensation committee.	Laws in Japan do not contain such a requirement.
NYSE Section 303A.09: The board of directors must make a self-assessment of its performance at least once a year to determine if it or its committees function effectively and report thereon.	Laws in Japan do not contain such a requirement.
NYSE Section 303A.12 (a): Each listed company CEO must certify to the NYSE each year that he or she is not aware of any violation by the company of NYSE corporate governance listing standards.	Laws in Japan do not contain such a requirement.

NYSE Section 303A.12 (b): Each listed company CEO must promptly notify the NYSE after any executive officer of the listed company becomes aware of any material non-compliance with any applicable provisions of this Section 303(A).	Laws in Japan do not contain such a requirement.

As can be seen from Table 2-2, the difference between the current corporate governance principles in Japan and in the US is very evident. Although since April 2003, large Japanese companies have been permitted to choose between the traditional statutory auditor system and the committee system, most Japanese companies have adopted the statutory auditor system rather than the committee system. Compared to the US, relevant practices still await establishment in Japan. Only a few Articles concerning auditors were revised in 2001 and 2002. Nevertheless, corporate governance in Japan is an important and improving issue. More and more practices and regulations have been established to enhance financial disclosures and board independence.

Appendix 2: Summary of the Institutional Framework of Corporate Governance in Taiwan

Like the legal system in Japan, the Taiwanese legal system is also based on civil law rather than common law. Corporate governance practices in Taiwan are governed by applicable laws, specifically the Company Law and Securities Exchange Law, and the Articles of Incorporation of each company (Filatotchev et al., 2005). Compared with the US and the UK, investor protection in Taiwan is weaker due to civil law (La Porta et al., 1997; Solomon, et al., 2003).

Taiwan declared its first corporate governance code of practice in October, 2002. This approach is similar to that adopted by the UK codes of practice because it is voluntary and based on the OECD principles for good corporate governance (Solomon et al., 2003). Compared to the regulations and laws in the US, which have strict regulations and laws concerning the disclosure of board structure, CEO compensation, and committees, the regulations and laws in Taiwan are not complete enough. Recently, because of several serious financial crises and scandals resulting from the transparency of the board[198], the relevant legal institutions have started to revise and pass laws, which can reinforce the monitoring function of boards. Most revisions are based on the current laws in the US because both countries belong to the civil law system rather than the common law system[199] and the US is a major trading country with Taiwan. The transition stage of laws and regulations in Taiwan provides us with a good opportunity to compare the differences between Taiwan, which is regarded as relational capitalism, and the US, which is regarded as stock market capitalism.

As in Japan, some Taiwanese companies are registered with the Securities and Exchange Commission (SEC) in the US and their securities are listed on the New York Stock Exchange (NYSE). Therefore, they are subject to those corporate

---

[198] For example, the scandal of China Development Financial Holding Corporation (SIC code: 2883) in 2006 and the scandal of Procomp Informatics Ltd. (SIC code: 2398) in 2004. Procomp Informatics Ltd. is unlisted from 8th Sep., 2004.

[199] Although the US (except for the Louisianan State) uses the common law system, in order to adapt economic development, the SEC and NYSE set up relevant regulations actively.

governance requirements, which are applicable to NYSE listed non-US companies. According to the NYSE listing regulations, which are codified in Section 303A[200] of the NYSE Listed Company Manual, NYSE listed non-US companies may, in general, follow their home country corporate governance practices in lieu of most of the new NYSE corporate governance requirements. In Table 2-4, we will describe the difference according to the order of rules.

[200] 303A General Application: Companies listed on the Exchange must comply with certain standards regarding corporate governance as codified in this Section 303A. Consistent with the NYSE's traditional approach, as well as the requirements of the Sarbanes-Oxley Act of 2002, certain provisions of Section 303A are applicable to some listed companies but not to others.

Table A2-1 The differences between Taiwanese corporate governance practices and NYSE standards for listed non-US companies

NYSE Standards for US Companies under Listed Company Manual Section 303A	Taiwanese Corporate Practices
NYSE Section 303A.01: A NYSE-listed company must have a majority of independent directors on its board of directors. Requiring a majority of independent directors will increase the quality of board oversight and lessen the possibility of damaging conflicts of interest	The Company Law in Taiwan does not require the board of directors of publicly traded companies to have a majority of independent directors. Starting on 21st Feb, 2002, the 'Taiwan Stock Exchange Corporation Criteria for Review of Securities Listings' forces listed companies to have at least two independent directors and at least one independent supervisor on the board but this rule only applies to those companies which are listed after 21st Feb, 2002[201].
NYSE Section 303A.02 establishes general standards to evaluate directors' independence (no director qualifies as independent unless the board of directors affirmatively determines that the director has no material relationship with the listed company directly or being a partner, shareholder or officer of an organization that has a relationship with the listed company).	The Company Law in Taiwan establishes comparable standards to evaluate director independence on 8th April, 2003 (revised on 23rd Sep, 2003)
NYSE Section 303A.03: To empower non-management directors to serve as a more effective check on management, the non-management directors of each company must meet at regularly scheduled executive sessions without management.	Laws in Taiwan do not contain such a requirement.
NYSE Section 303A.04: Listed companies shall have a nominating/corporate governance committee comprised entirely of independent directors which shall have a written charter establishing certain minimum responsibilities as set forth in **NYSE Section 303A.04 (b) (i)** and providing for an annual	Laws in Taiwan do not contain such a requirement. Directors are nominated by the shareholders.

[201] Taiwan Stock Exchange Corporation Criteria for Review of Securities Listings, Article 9(10) regulates this. However, according to Taiwan-Stock-Listing-0930032147 of the Taiwan Stock Exchange (TSE), only the companies that are listed after 21st February, 2002 need to obey this Act.

evaluation of the committee's performance.	
NYSE Section 303A.05 (a): Listed companies shall have a compensation committee comprised entirely of independent directors.	Laws in Taiwan do not require the board of directors to establish a compensation committee. 'Corporate Governance Best-Practice Principles for TSEC/GTSM Listed Companies' only suggests having a compensation committee[202]. In order to comply with the corporate governance principles established under the Sarbanes-Oxley Act of 2002, some companies, such as TSMC, currently have a compensation committee.
NYSE Section 303A.06: Listed companies must have an audit committee that satisfies the requirements of Rule 10A-3 under the Securities Exchange Act of 1934 (the Exchange Act). Foreign private issuers must satisfy the requirements of Rule 10A-3 under the Exchange Act by July 31st, 2005.	Laws in Taiwan do not contain such a requirement. 'Corporate Governance Best-Practice Principles for TSEC/GTSM Listed Companies' only suggests having an audit committee. But, in order to comply with the corporate governance principles established by NYSE, some companies, such as TSMC, have an audit committee, which complies with the requirements of Rule 10A-3 of the Exchange Act as a foreign private issuer.
NYSE Section 303A.07 (a): The audit committee shall consist of at least three members. All of its members shall be financially literate or must acquire such financial knowledge within a reasonable period and at least one of its members shall have experience in accounting or financial administration.	Laws in Taiwan only suggest the establishment of audit committees. If there is an audit committee, it should consist of at least one independent director[203].

[202] Corporate Governance Best-Practice Principles for TSEC/GTSM Listed Companies, Article 27: For the purpose of developing monitoring functions and strengthening management mechanisms, the board of directors of a TSEC/GTSM listed company may, taking into account the basis of the size of the board and the number of the independent directors, set up audit, nomination, compensation or any other functional committees and have them stipulated in the articles of incorporation. Functional committees shall be responsible to the board and submit the proposals to the board of directors for approval.

[203] Corporate Governance Best-Practice Principles for TSEC/GTSM Listed Companies, Article 28: It is advisable that a TSEC/GTSM listed company make it the first priority to set up the audit committee. The audit committee shall consist of at least one independent director and be convened by the same. It would be advisable that independent supervisors be invited to sit in at the meeting. At least one of the independent directors as referred to in the preceding paragraph shall have professional expertise in accounting or finance.

NYSE Section 303A.07 (a): If a member of the audit committee is simultaneously a member of the audit committee of more than three public listed companies, and the listed company does not limit the number of audit committees on which its members may serve, then, in each case the board shall determine whether the simultaneous service would prevent such a member from effectively serving on the listed company's audit committee, and shall report its decision in the annual proxy statement of the company or in the company's annual report on Form 10-K filed with the SEC.	Laws in Taiwan do not contain such a requirement concerning the audit committee. But, under the guideline which was announced by the Ministry of Finance, an independent director of any company applying for permission to list on the Taiwan Stock Exchange shall not be deemed to be independent if he simultaneously serves as an independent director or supervisor of more than five companies[204]. The guideline also requires public listed companies to disclose the number of companies of which their independent directors are simultaneously an independent director or supervisor.
NYSE Section 303A.07 (c): The audit committee should have a written charter establishing the duties and responsibilities of its members, including the duties and responsibilities required, at a minimum, by Section 10A-3(b)(1) of the Exchange Act.	Laws in Taiwan do not contain such a requirement.
NYSE Section 303A.07(c) (iii) (B) and (C): The two Acts establish audit committee objectives.	Article 28 in 'Corporate Governance Best-Practice Principles for TSEC/GTSM Listed Companies' lists the audit committee objectives[205].
NYSE Section 303A.07(c) (iii) (G): Provides that the audit committee should establish clear policies for hiring external auditor's employees.	Laws in Taiwan do not contain such a requirement.

[204] Announcement No. 0920003896, Ministry of Finance.

[205] It is advisable that a TSEC/GTSM listed company make it the first priority to set up the audit committee, whose functions and duties are as follows:

1.examination of the accounting system, financial conditions, and the procedure for financial reports of the company;
2.reviewing the procedures for major financial and business transactions such as acquisition or disposal of assets, lending funds, and making endorsements or providing guarantees;
3.communications with the CPAs of the company;
4.examination of the internal auditors and their performance;
5.examination of the internal control of the company;
6.assessment, inspection, and monitoring of the existence and threat of risks of all kinds;
7.inspection of law compliance by the company;
8.reviewing the transactions set forth in Article 32 of the Principles where voting shall be disqualified due to conflicts of the interest of directors, especially material related-party transactions, acquisition or disposal of assets, lending funds, making endorsements or providing guarantees, and establishment of an investment company for the purpose of making investment; and
9.assessing the qualifications of CPAs and nomination of qualified candidates.

NYSE Section 303A.07 (d): Provides that each company must have an internal audit function in order to provide to the management and to the audit committee permanent assessments on the company's risk management processes and internal control system.	The Company Law in Taiwan requires public listed companies to establish an internal audit department. Internal auditors are subject to strict qualifications standards under Taiwanese law, which require the board of directors to approve the head of a company's internal audit department.
NYSE Section 303A.08: Shareholders must be given the opportunity to vote on all equity based compensation plans and material revisions thereto with certain exceptions.	The Company Law in Taiwan imposes a similar requirement[206]. In addition to Company Law, the Articles of Incorporation also regulate the distribution of equity based compensation[207].
NYSE Section 303A.09: Companies must adopt and disclose corporate governance guidelines, including several issues for which such reporting is mandatory, and include such information on the company's website, which should also include the charters of the audit committee, the nominating committee, and the compensation committee.	Pursuant to relevant laws in Taiwan, a listed company must establish and disclose corporate governance guidelines on the company's website[208].
NYSE Section 303A.09: The board of directors must make a self-assessment of its performance at least once a year to determine if it or its committees function effectively and report thereon.	Laws in Taiwan do not contain such a requirement.
NYSE Section 303A.12 (a): Each listed company CEO must certify to the NYSE each year that he or she is not aware of any violation by the company of NYSE corporate governance listing standards.	Laws in Taiwan do not contain such a requirement. In order to comply with relevant SEC regulations, some NYSE listed companies' CEOs are required to certify in the company's 20-F annual report that the

[206] Company Law, Article 240. I.: A company may, by a resolution adopted by a majority of the shareholders present who represent two-thirds or more of the total number of its outstanding shares of the company, have the whole or a part of the surplus profit distributable as dividends and bonuses distributed in the form of new shares to be issued by the company for such purpose. In case the amount of balance of such distributable surplus profit is less the par value (or a fraction) of one share, it shall be paid in cash.

[207] For example, TSMC currently has in place two equity based compensation plans. First, TSMC's employee stock option plans (ESOP) are required to be approved by the board of directors. Shareholders' approval is not required if the number of options granted under the relevant ESOP does not exceed the reservation made in TSMC's Articles of Incorporation. Otherwise, any change to such reservation in the Articles of Incorporation requires shareholders' approval. Second, TSMC's employees' profit sharing plan requires shareholders' approval.

[208] Corporate Governance Best-Practice Principles for TSEC/GTSM Listed Companies, Article 10 and Article 58.

	information contained therein fairly represents in all material respects the financial condition and results of operation of the company.
NYSE Section 303A.12 (b): Each listed company CEO must promptly notify the NYSE after any executive officer of the listed company becomes aware of any material non-compliance with any applicable provisions of this Section 303(A).	Laws in Taiwan do not contain such a requirement.

From the table above, we can observe that the current corporate governance principles in Taiwan and in the US are very different. In the US, relevant regulations and rules have been established and used since the Securities Act and the Securities Exchange Act were passed in 1933 and 1934. With the Securities Exchange Act of 1934, the US Congress created the Securities and Exchange Commission (SEC). The Act empowers the SEC with broad authority over all aspects of the securities industry. This includes the power to register, regulate, and oversee brokerage firms. It also empowers the SEC to require periodic reporting of information by companies with publicly traded securities. On 30th July, 2002, American President George W. Bush signed the Sarbanes-Oxley Act into law. The Act mandated a number of reforms to enhance corporate responsibility, enhance financial disclosures and combat corporate and accounting fraud. The Act also created the Public Company Accounting Oversight Board (PCAOB), to oversee the activities of the auditing profession.

Compared to the US, relevant practices still remain to be established in Taiwan. A few improved practices concerning corporate governance were established between 2001 and 2004. Before 2001, the supervisory institutions seldom paid attention to the importance of corporate governance. Although the relevant regulations and Act were not established until five years ago, corporate governance in Taiwan has been improved recently. More and more practices and regulations have been established to enhance financial disclosures and the independence of the board, and to rationalise top executives' compensation and non-executive employees' incentive payments. These reforms give us a good opportunity to observe corporate governance in Taiwan and make comparisons with other countries that developed a more regulated corporate governance mechanism a long time ago.

Appendix 3: Structural parameters, Japan

Table A3-1 Structural parameters: Firm Performance (t) and Governance (t+1), Japan

OUTSIDE: the percentage of outside directors. BDOWN: the percentage of board ownership. BD_Q: the percentage of directors who occupy more than three positions in the company. BANK_D: the ratio of the number of bank representatives on the board to the total number of directors. FINOWN: the ratio of financial institutions shares to total outstanding shares. CROSS: the ratio of institutional shares to total outstanding shares. BLOCK: the percentage of blockholder ownership. GAKUBATSU: the ratio of the number of graduates from the elite universities (Tokyo, Kyoto, Waseda Hitotsubashi, and Keio) to the total number of directors in the board. GOVOWN: the ratio of government shares to total outstanding shares. GOV_I: the absolute number of government investors. GOV_APP: the ratio of the number of political-related directors to the total number of directors. ROE: computed as the net income divided by the shareholder's equity. TSR: the total return on shares assuming dividends are reinvested. ROA: calculated by dividing a company's annual earnings by its total assets.

	2001-2003 data		Normalised data	
Description of path	**path coefficient**	**t value**	**path coefficient**	**t value**
OUTSIDE <-- BOARD	1.00		1.00	
BDOWN <-- BOARD	0.01	0.20	0.07	1.82*
BD_Q <-- BOARD	0.47	1.69*	-0.03	-0.24
BANK_D <-- INST	1.00		1.00	
FINOWM <-- INST	-4.83	-2.58***	-6.93	-3.24***
CROSS <-- INST	10.74	2.56**	11.46	3.22***
BLOCK <-- INST	5.35	2.62***	6.36	3.24***
GAKUBATSU<--GOV	1.00		1.00	
GOVOWN <-- GOV	0.31	3.58***	0.23	2.83***
GOV_I <-- GOV	0.12	2.65***	0.04	1.97**
GOV_APP <-- GOV	0.37	5.10***	0.62	7.18***
ROE <-- PERF	1.00		1.00	
TSR <-- PERF	0.22	2.15**	0.05	8.39***
ROA <-- PERF	0.22	3.93***	0.14	8.54***
Direct Effect				
BOARD --> INST	0.01	0.19	0.01	0.08
BOARD --> GOV	0.07	0.20	0.23	1.62
PERF --> GOV	-0.03	-1.92*	-0.01	-2.69***
PERF --> INST	-0.38	-2.45**	-0.11	-3.69***
PERF --> BOARD	-0.22	-2.63***	-0.10	-3.82***
Indirect Effect				
PERF-->BOARD-->INST	-0.002	-0.19	-0.001	-0.08
PERF-->BOARD-->GOV	-0.02	-0.20	-0.02	-1.56
Total Effect				
PERF --> INST	-0.03	-1.94*	-0.01	-2.73***
PERF --> GOV	-0.40	-2.80***	-0.11	-4.56***
Observations	406		1000	
GFI	0.90		0.88	
AGFI	0.84		0.78	
SRMR	0.09		0.10	
RMSEA	0.10		0.13	

* p<0.1; ** p<0.05; *** p<0.01

Table A3-2 Structural parameters: Firm Performance (t) and Governance (t+1), Japan, without GAKUBATSU

OUTSIDE: the percentage of outside directors. BDOWN: the percentage of board ownership. BD_Q: the percentage of directors who occupy more than three positions in the company. BANK_D: the ratio of the number of bank representatives on the board to the total number of directors. FINOWN: the ratio of financial institutions shares to total outstanding shares. CROSS: the ratio of institutional shares to total outstanding shares. BLOCK: the percentage of blockholder ownership. GOV_I: the absolute number of government investors. GOVOWN: the ratio of government shares to total outstanding shares. GOV_APP: the ratio of the number of political-related directors to the total number of directors. ROE: computed as the net income divided by the shareholder's equity. TSR: the total return on shares assuming dividends are reinvested. ROA: calculated by dividing a company's annual earnings by its total assets.

	2001-2003 data		Normalised data	
Description of path	**path coefficient**	**t value**	**path coefficient**	**t value**
OUTSIDE <-- BOARD	1.00		1.00	
BDOWN <-- BOARD	0.06	0.97	0.17	3.71***
BD_Q <-- BOARD	-0.07	-0.61	-0.10	-0.91
BANK_D <-- INST	1.00		1.00	
FINOWM <-- INST	-4.82	-2.83***	-5.20	-3.82***
CROSS <-- INST	7.60	2.82***	10.72	3.77***
BLOCK <-- INST	4.50	2.82***	5.29	3.84***
GOV_I <-- GOV	1.00		1.00	
GOVOWN <-- GOV	3.90	1.91*	2.91	1.81*
GOV_APP <-- GOV	7.83	1.49	6.88	3.03***
ROE <-- PERF	1.00		1.00	
TSR <-- PERF	0.06	4.76***	0.05	8.81***
ROA <-- PERF	0.15	5.14***	0.15	8.98***
Direct Effect				
BOARD --> INST	0.02	0.80	-0.02	-1.35
BOARD --> GOV	0.01	0.74	0.13	1.80*
PERF --> INST	-0.02	-2.07**	-0.02	-3.02***
PERF --> GOV	-0.01	-1.71*	-0.05	-2.97***
PERF --> BOARD	-0.11	-2.48**	-0.14	-5.23***
Indirect Effect				
PERF-->BOARD-->INST	-0.002	-0.73	0.003	1.30
PERF-->BOARD-->GOV	-0.001	-0.78	-0.02	-1.80*
Total Effect				
PERF --> INST	-0.02	-2.21**	-0.02	-3.13***
PERF --> GOV	-0.01	-1.67*	-0.07	-4.89***
Observations	406		1000	
GFI	0.88		0.88	
AGFI	0.82		0.82	
SRMR	0.09		0.09	
RMSEA	0.11		0.12	

* p<0.1; ** p<0.05; *** p<0.01

Table A3-3 Structural parameters: Governance (t) and Firm Performance (t+1), Japan

OUTSIDE: the percentage of outside directors. BDOWN: the percentage of board ownership. BD_Q: the percentage of directors who occupy more than three positions in the company. CROSS: the ratio of institutional shares to total outstanding shares. FINOWN: the ratio of financial institutions shares to total outstanding shares. BANK_D: the ratio of the number of bank representatives on the board to the total number of directors. BLOCK: the percentage of blockholder ownership. GOVOWN: the ratio of government shares to total outstanding shares. GOV_I: the absolute number of government investors. GOV_APP: the ratio of the number of political-related directors to the total number of directors. GAKUBATSU: the ratio of the number of graduates from the elite universities (Tokyo, Kyoto, Waseda Hitotsubashi, and Keio) to the total number of executives in the highest board positions. ROE: computed as the net income divided by the shareholder's equity. TSR: the total return on shares assuming dividends are reinvested. ROA: calculated by dividing a company's annual earnings by its total assets.

	2001-2003 data		Normalised data	
Description of path	**path coefficient**	**t value**	**path coefficient**	**t value**
OUTSIDE <-- BOARD	1.00		1.00	
BDOWN <-- BOARD	0.42	3.49***	0.35	6.63***
BD_Q <-- BOARD	0.01	0.06	-0.18	-1.62
CROSS <-- INST	1.00		1.00	
FINOWM <-- INST	-2.46	-4.26***	-3.87	-4.41***
BANK_D <-- INST	0.08	1.17	0.02	0.59
BLOCK <-- INST	0.58	7.32***	0.56	11.3***
GOVOWN <-- GOV	1.00		1.00	
GOV_I <-- GOV	0.34	3.21***	0.29	5.09***
GOV_APP <-- GOV	0.73	5.83***	0.61	9.99***
GAKUBATSU <-- GOV	1.42	3.93***	1..57	7.63***
ROE <-- PERF	1.00		1.00	
TSR <-- PERF	0.13	2.51**	0.11	4.41***
ROA <-- PERF	0.19	3.45***	0.19	5.62***
Direct Effect				
INST --> BOARD	0.31	3.59***	0.25	5.76***
GOV --> BOARD	-0.08	-0.65	0.28	3.77***
INST --> PERF	-0.30	-1.73*	-0.46	-3.67***
GOV --> PERF	-0.57	-1.97**	-0.48	-2.93***
BOARD --> PERF	-0.13	-0.41	0.18	0.98
Indirect Effect				
INST --> BOARD --> PERF	-0.04	-0.41	0.05	0.99
GOV --> BOARD --> PERF	0.01	0.34	0.05	0.94
Total Effect				
INST --> PERF	-0.34	-2.11**	-0.41	-3.76***
GOV --> PERF	-0.56	-1.97**	-0.43	-2.96***
Observations	406		1000	
GFI	0.91		0.88	
AGFI	0.87		0.82	
SRMR	0.07		0.08	
RMSEA	0.08		0.11	

* p<0.1; ** p<0.05; *** p<0.01

Table A3-4 Structural parameters: Governance (t) and Firm Performance (t+1), Japan, without GAKUBATSU

OUTSIDE: the percentage of outside directors. BDOWN: the percentage of board ownership. BD_Q: the percentage of directors who occupy more than three positions in the company. BLOCK: the percentage of blockholder ownership. FINOWN: the ratio of financial institutions shares to total outstanding shares. BANK_D: the ratio of the number of bank representatives on the board to the total number of directors. CROSS: the ratio of institutional shares to total outstanding shares. GOVOWN: the ratio of government shares to total outstanding shares. GOV_I: the absolute number of government investors. GOV_APP: the ratio of the number of political-related directors to the total number of directors. ROE: computed as the net income divided by the shareholder's equity. TSR: the total return on shares assuming dividends are reinvested. ROA: calculated by dividing a company's annual earnings by its total assets.

	2001-2003 data		Normalised data	
Description of path	**path coefficient**	**t value**	**path coefficient**	**t value**
OUTSIDE <-- BOARD	1.00		1.00	
BDOWN <-- BOARD	0.22	2.20**	0.22	4.82***
BD_Q <-- BOARD	-0.07	-0.40	-0.27	-2.63***
BLOCK <-- INST	1.00		1.00	
FINOWM <-- INST	-6.57	-1.34	-4.62	-3.2***
BANK_D <-- INST	0.11	1.47	0.14	3.06***
CROSS <-- INST	5.90	1.34	4.09	3.18***
GOVOWN <-- GOV	1.00		1.00	
GOV_I <-- GOV	0.36	2.79***	0.32	4.35***
GOV_APP <-- GOV	1.21	3.67***	0.92	7.01***
ROE <-- PERF	1.00		1.00	
TSR <-- PERF	0.12	2.67***	0.10	4.79***
ROA <-- PERF	0.19	3.48***	0.18	5.69***
Direct Effect				
INST --> BOARD	0.27	3.00***	0.23	4.35***
GOV --> BOARD	0.13	0.79	0.49	4.69***
INST --> PERF	-0.48	-2.24**	-0.69	-4.20***
GOV --> PERF	-0.63	-2.02**	-0.57	-2.92***
BOARD --> PERF	-0.27	-1.14	0.13	0.88
Indirect Effect				
INST --> BOARD --> PERF	-0.07	-1.07	0.03	0.90
GOV --> BOARD --> PERF	-0.04	-0.68	0.06	0.85
Total Effect				
INST --> PERF	-0.55	-2.35**	-0.66	-4.22***
GOV --> PERF	-0.67	-2.06**	-0.51	-2.97***
Observations	406		1000	
GFI	0.90		0.88	
AGFI	0.84		0.82	
SRMR	0.08		0.08	
RMSEA	0.10		0.12	

* p<0.1; ** p<0.05; *** p<0.01

Table A3-5 Structural parameters: DOI (t) and Governance (t+1), Japan

BDOWN: the percentage of board ownership. OUTSIDE: the percentage of outside directors. BD_Q: the percentage of directors who occupy more than three positions in the company. BLOCK: the percentage of blockholder ownership. FINOWN: the ratio of financial institutions shares to total outstanding shares. BANK_D: the ratio of the number of bank representatives on the board to the total number of directors. CROSS: the ratio of institutional shares to total outstanding shares. GOV_I: the absolute number of government investors. GOVOWN: the ratio of government shares to total outstanding shares. GOV_APP: the ratio of the number of political-related directors to the total number of directors. GAKUBATSU: the ratio of the number of graduates from the elite universities (Tokyo, Kyoto, Waseda Hitotsubashi, and Keio) to the total number of directors in the board. FOROWN: the ratio of foreign shares to total outstanding shares. FSTS: the ratio of foreign sales to total sales. FATA: the ratio of foreign assets to total assets. FSE: the number of foreign listed exchange.

	2001-2003 data		Normalised data	
Description of path	**path coefficient**	**t value**	**path coefficient**	**t value**
BDOWN <-- BOARD	1.00		1.00	
OUTSIDE <-- BOARD	4.74	3.49***	3.03	5.00***
BD_Q <-- BOARD	-0.50	-0.57	-0.78	-1.38
BLOCK <-- INST	1.00		1.00	
FINOWM <-- INST	-0.95	-6.18***	-1.10	-9.98***
BANK_D <-- INST	0.12	2.51**	0.10	3.34***
CROSS <-- INST	-3.86	-3.25***	-4.09	-5.04***
GOV_I <--GOV	1.00		0.19	2.39**
GOVOWN <-- GOV	3.40	2.42***	2.21	10.15***
GOV_APP <-- GOV	4.17	2.36**	1.00	
GAKUBATSU <-- GOV	7.43	2.34**	2.17	7.11***
FOROWN <-- DOI	1.00		1.00	
FSTS <-- DOI	2.87	10.35***	2.90	15.38***
FATA <-- DOI	1.93	10.43***	1.85	16.09***
FSE <-- DOI	0.07	6.09***	0.07	9.24***
Direct Effect				
BOARD --> INST	1.01	2.46**	2.14	4.57***
BOARD --> GOV	0.36	1.72*	2.35	6.09***
DOI --> INST	0.06	2.15**	0.05	1.93*
DOI --> GOV	-0.05	-2.05**	-0.09	-3.05***
DOI --> BOARD	0.04	2.41**	0.02	1.77*
Indirect Effect				
DOI-->BOARD-->INST	0.04	1.86*	0.04	1.68*
DOI-->BOARD-->GOV	0.01	1.46	0.05	1.72*
Total Effect				
DOI --> INST	0.10	3.45***	0.09	5.12***
DOI --> GOV	-0.04	-2.05**	-0.04	-2.75***
Observations	406		1000	
GFI	0.86		0.85	
AGFI	0.80		0.78	
SRMR	0.09		0.10	
RMSEA	0.11		0.12	

* p<0.1; ** p<0.05; *** p<0.01

Table A3-6 Structural parameters: DOI (t) and Governance (t+1), Japan without GAKUBATSU

FINOWN: the ratio of financial institutions shares to total outstanding shares. BANK_D: the ratio of the number of bank representatives on the board to the total number of directors. CROSS: the ratio of institutional shares to total outstanding shares. BLOCK: the percentage of blockholder ownership. GOVOWN: the ratio of government shares to total outstanding shares. GOV_APP: the ratio of the number of political-related directors to the total number of directors. GOV_I: the absolute number of government investors. BDOWN: the percentage of board ownership. OUTSIDE: the percentage of outside directors. BD_Q: the percentage of directors who occupy more than three positions in the company. FOROWN: the ratio of foreign shares to total outstanding shares. FSTS: the ratio of foreign sales to total sales. FATA: the ratio of foreign assets to total assets. FSE: the number of foreign listed exchange.

	2001-2003 data		Normalised data	
Description of path	**path coefficient**	**t value**	**path coefficient**	**t value**
BDOWN <-- BOARD	1.00		1.00	
OUTSIDE <-- BOARD	2.88	2.86***	20.51	2.80***
BD_Q <-- BOARD	-0.45	-0.48	-1.75	-1.59
FINOWM <-- INST	1.00		1.00	
BANK_D <-- INST	-1.64	-0.53	-0.15	-3.63***
CROSS <-- INST	23.13	0.53	-1.73	-12.00***
BLOCK <-- INST	-15.49	-0.53	-0.88	-13.39***
GOVOWN <-- GOV	1.00		1.00	
GOV_I <-- GOV	0.08	1.43	0.22	3.01***
GOV_APP <-- GOV	0.33	4.37***	1.73	5.34***
FOROWN <-- DOI	1.00		1.00	
FSTS <-- DOI	2.86	10.35***	3.23	14.07***
FATA <-- DOI	1.92	10.44***	1.89	15.36***
FSE <-- DOI	0.07	6.10***	0.08	9.53***
Direct Effect				
BOARD --> INST	-0.59	-0.53	-4.29	-3.41***
BOARD --> GOV	6.11	4.17***	2.41	3.13***
DOI --> INST	0.01	0.41	0.24	4.72***
DOI --> GOV	-0.34	-2.63**	-0.13	-4.04***
DOI --> BOARD	0.04	2.37**	0.02	2.49***
Indirect Effect				
DOI-->BOARD-->INST	-0.02	-0.52	-0.09	-2.46**
DOI-->BOARD-->GOV	0.24	2.17**	0.05	2.33**
Total Effect				
DOI --> INST	-0.01	-0.54	0.15	4.11***
DOI --> GOV	-0.10	2.74***	-0.08	-3.82***
Observations	406		1000	
GFI	0.87		0.86	
AGFI	0.81		0.79	
SRMR	0.09		0.09	
RMSEA	0.11		0.12	

* p<0.1; ** p<0.05; *** p<0.01

Table A3-7 Structural parameters: Governance (t) and DOI (t+1), Japan

FINOWN: the ratio of financial institutions shares to total outstanding shares BANK_D: the ratio of the number of bank representatives on the board to the total number of directors. CROSS: the ratio of institutional shares to total outstanding shares. BLOCK: the percentage of blockholder ownership. GOV_APP: the ratio of the number of political-related directors to the total number of directors. GOVOWN: the ratio of government shares to total outstanding shares. GOV_I: the absolute number of government investors. GAKUBATSU: the ratio of the number of graduates from the elite universities (Tokyo, Kyoto, Waseda Hitotsubashi, and Keio) to the total number of directors in the board. BDOWN: the percentage of board ownership. OUTSIDE: the percentage of outside directors. BD_Q: the percentage of directors who occupy more than three positions in the company. FOROWN: the ratio of foreign shares to total outstanding shares. FSTS: the ratio of foreign sales to total sales. FATA: the ratio of foreign assets to total assets. FSE: the number of foreign listed exchange.

	2001-2003 data		Normalised data	
Description of path	**path coefficient**	**t value**	**path coefficient**	**t value**
BDOWN <-- BOARD	1.00		1.00	
OUTSIDE <-- BOARD	3.04	3.38***	7.99	3.08***
BD_Q <-- BOARD	-0.06	-0.10	-0.49	-0.85
FINOWM <-- INST	1.00		1.00	
BANK_D <-- INST	-0.06	-1.68*	-0.07	-2.11**
CROSS <-- INST	-0.52	-5.87***	-1.05	-13.65***
BLOCK <-- INST	-0.32	-4.97***	-0.68	-12.67***
GOV_APP <-- GOV	1.00		1.00	
GOVOWN <-- GOV	1.16	5.76***	1.26	10.01***
GOV_I <-- GOV	0.44	3.29***	0.28	3.76***
GAKUBATSU <-- GOV	1.63	3.62***	2.15	7.82***
FOROWN <-- DOI	1.00		1.00	
FSTS <-- DOI	3.51	8.46***	3.86	11.65***
FATA <-- DOI	2.20	9.08***	2.25	13.12***
FSE <-- DOI	0.08	5.61***	0.08	8.19***
Direct Effect				
INST --> BOARD	-0.06	-3.35***	-0.03	-3.00***
GOV --> BOARD	-0.04	-0.65	0.04	2.35***
INST --> DOI	-0.03	-0.66	0.01	0.49
GOV --> DOI	-0.56	-3.16***	-0.38	-4.62***
BOARD --> DOI	0.49	0.84	0.72	1.75*
Indirect Effect				
INST --> BOARD --> DOI	-0.03	-0.85	-0.02	-1.53
GOV --> BOARD --> DOI	-0.02	-0.57	0.03	1.36
Total Effect				
INST --> DOI	-0.06	-1.74*	-0.01	-0.28
GOV --> DOI	-0.58	-3.26***	-0.35	-4.51***
Observations	406		1000	
GFI	0.88		0.86	
AGFI	0.82		0.79	
SRMR	0.09		0.08	
RMSEA	0.10		0.12	

* p<0.1; ** p<0.05; *** p<0.01

Table A3-8 Structural parameters: Governance (t) and DOI (t+1), Japan, without GAKUBATSU

FINOWN: the ratio of financial institutions shares to total outstanding shares. BANK_D: the ratio of the number of bank representatives on the board to the total number of directors. CROSS: the ratio of institutional shares to total outstanding shares. BLOCK: the percentage of blockholder ownership. GOV_I: the absolute number of government investors. GOVOWN: the ratio of government shares to total outstanding shares. GOV_APP: the ratio of the number of political-related directors to the total number of directors. BDOWN: the percentage of board ownership. OUTSIDE: the percentage of outside directors. BD_Q: the percentage of directors who occupy more than three positions in the company. FOROWN: the ratio of foreign shares to total outstanding shares. FSTS: the ratio of foreign sales to total sales. FATA: the ratio of foreign assets to total assets. FSE: the number of foreign listed exchange.

	2001-2003 data		Normalised data	
Description of path	**path coefficient**	**t value**	**path coefficient**	**t value**
BDOWN <-- BOARD	1.00		1.00	
OUTSIDE <-- BOARD	9.60	1.24	15.12	1.63
BD_Q <-- BOARD	-0.99	-1.06	-0.92	-1.44
FINOWM <-- INST	1.00		1.00	
BANK_D <-- INST	-0.10	-1.54	-0.08	-2.32**
CROSS <-- INST	-1.28	-7.83***	-1.27	-13.41***
BLOCK <-- INST	-0.87	-7.96***	-0.75	-13.03***
GOV_I <-- GOV	1.00		1.00	
GOVOWN <-- GOV	2.45	2.85***	3.62	4.04***
GOV_APP <-- GOV	3.69	2.14**	4.66	3.70***
FOROWN <-- DOI	1.00		1.00	
FSTS <-- DOI	3.42	8.61***	3.72	11.97***
FATA <-- DOI	2.19	9.16***	2.24	13.28***
FSE <-- DOI	0.07	5.61***	0.08	8.17***
Direct Effect				
INST --> BOARD	-0.02	-1.20	-0.02	-1.58
GOV --> BOARD	0.01	0.30	0.05	1.26
INST --> DOI	0.13	1.64	0.04	1.58
GOV --> DOI	-1.18	-2.31**	-1.11	-3.11***
BOARD --> DOI	1.08	1.63	0.72	1.87*
Indirect Effect				
INST --> BOARD --> DOI	-0.02	-0.99	-0.01	-1.21
GOV --> BOARD --> DOI	0.01	0.29	0.04	1.03
Total Effect				
INST --> DOI	0.11	1.43	0.03	1.25
GOV --> DOI	-1.17	-2.30**	-1.07	-3.08***
Observations	406		1000	
GFI	0.88		0.86	
AGFI	0.82		0.8	
SRMR	0.08		0.08	
RMSEA	0.10		0.12	

* p<0.1; ** p<0.05; *** p<0.01

Appendix 4: Structural parameters, Taiwan

Table A4-1 Structural parameters: Firm Performance (t) and Governance (t+1), Taiwan

OUTSIDE: the percentage of outside directors. BDOWN: the percentage of board ownership. MANOWN: the percentage of CEO ownership. BD_Q: the percentage of directors who occupy more than three positions in the company. BANK_D: the ratio of the number of bank representatives on the board to the total number of directors. FINOWN: the ratio of financial institutions shares to total outstanding shares. CROSS: the ratio of institutional shares to total outstanding shares. BLOCK: the percentage of blockholder ownership. GOVOWN: the ratio of government shares to total outstanding shares. GOV_I: the absolute number of government investors. GOV_APP: the ratio of the number of political-related directors to the total number of directors. ROE: computed as the net income divided by the shareholder's equity. TSR: the total return on shares assuming dividends are reinvested. ROA: calculated by dividing a company's annual earnings by its total assets.

	2001-2003 data		Normalised data	
Description of path	**path coefficient**	**t value**	**path coefficient**	**t value**
OUTSIDE <-- BOARD	1		1	
BDOWN <-- BOARD	-2.67	-3.24***	-2.66	-5.50***
MANOWN <-- BOARD	-0.86	-3.36***	-0.94	-5.68***
BD_Q <-- BOARD	0.26	0.78	0.22	1.09
BANK_D <-- INST	1		1	
FINOWM <-- INST	0.29	6.26***	0.33	9.35***
CROSS <-- INST	0.62	4.45***	0.88	8.16***
BLOCK <-- INST	0.43	3.59***	0.35	3.85***
GOVOWN <-- GOV	1		1	
GOV_I <-- GOV	0.26	6.28***	0.12	5.75***
GOV_APP <-- GOV	1.15	9.18***	0.18	0.52
ROE <-- PERF	1		1	
TSR <-- PERF	1.36	4.23***	1.35	6.58***
ROA <-- PERF	0.59	18.33***	0.60	29.13***
Direct Effect				
BOARD --> INST	0.63	2.83***	0.72	4.87***
BOARD --> GOV	0.45	2.46**	0.53	4.43***
PERF --> INST	-0.02	-1.19	-0.01	-0.70
PERF --> GOV	-0.04	-0.59	0.01	0.79
PERF --> BOARD	-0.11	-2.99***	-0.11	-5.05***
Indirect Effect				
PERF-->BOARD-->INST	-0.07	-3.55***	-0.08	-6.54***
PERF-->BOARD-->GOV	-0.05	-2.90***	-0.06	-5.56***
Total Effect				
PERF --> INST	-0.09	-3.19***	-0.09	-4.77***
PERF --> GOV	-0.09	-2.01**	-0.05	-2.61***
Observations	400		1000	
GFI	0.89		0.88	
AGFI	0.83		0.82	
SRMR	0.09		0.09	
RMSEA	0.10		0.11	

* p<0.1; ** p<0.05; *** p<0.01

Table A4-2 Structural parameters: Path Coefficients: Firm Performance (t) and Governance (t+1), Taiwan, without MANOWN

OUTSIDE: the percentage of outside directors. BDOWN: the percentage of board ownership. BD_Q: the percentage of directors who occupy more than three positions in the company. BANK_D: the ratio of the number of bank representatives on the board to the total number of directors. FINOWN: the ratio of financial institutions shares to total outstanding shares. CROSS: the ratio of institutional shares to total outstanding shares. BLOCK: the percentage of blockholder ownership. GOVOWN: the ratio of government shares to total outstanding shares. GOV_I: the absolute number of government investors. GOV_APP: the ratio of the number of political-related directors to the total number of directors. ROE: computed as the net income divided by the shareholder's equity. TSR: the total return on shares assuming dividends are reinvested. ROA: calculated by dividing a company's annual earnings by its total assets.

	2001-2003 data		Normalised data	
Description of path	**path coefficient**	**t value**	**path coefficient**	**t value**
OUTSIDE <-- BOARD	1		1	
BDOWN <-- BOARD	-0.64	-5.23***	-0.55	-8.83***
BD_Q <-- BOARD	-0.08	-0.44	-0.21	-2.05**
BANK_D <-- INST	1		1	
FINOWM <-- INST	0.27	5.52***	0.29	7.93***
CROSS <-- INST	0.30	2.35**	0.33	3.59***
BLOCK <-- INST	0.36	3.11***	0.50	5.73***
GOVOWN <-- GOV	1		1	
GOV_I <-- GOV	0.24	4.9***	0.13	5.47***
GOV_APP <-- GOV	2.96	11.46***	2.87	18.09***
ROE <-- PERF	1		1	
TSR <-- PERF	1.40	4.51***	1.41	7.17***
ROA <-- PERF	0.54	15.29***	0.50	21.02***
Direct Effect				
BOARD --> INST	0.96	5.38***	0.72	9.19***
BOARD --> GOV	0.83	4.31***	0.82	6.91***
PERF --> INST	0.14	2.71***	0.13	4.33***
PERF --> GOV	0.14	2.34***	0.15	4.52***
PERF --> BOARD	-0.25	-4.33***	-0.22	-6.26***
Indirect Effect				
PERF-->BOARD-->INST	-0.24	-4.33***	-0.16	-5.95***
PERF-->BOARD-->GOV	-0.21	-3.67***	-0.18	-5.12***
Total Effect				
PERF --> INST	-0.10	-2.71***	-0.03	-1.76*
PERF --> GOV	-0.07	-3.09***	-0.03	-2.69***
Observations	400		1000	
GFI	0.90		0.89	
AGFI	0.83		0.82	
SRMR	0.08		0.08	
RMSEA	0.10		0.11	

* p<0.1; ** p<0.05; *** p<0.01

Table A4-3 Structural parameters: Governance (t) and Firm Performance (t+1), Taiwan

BDOWN: the percentage of board ownership. OUTSIDE: the percentage of outside directors. MANOWN: the percentage of CEO ownership. BD_Q: the percentage of directors who occupy more than three positions in the company. FINOWN: the ratio of financial institutions shares to total outstanding shares. BANK_D: the ratio of the number of bank representatives on the board to the total number of directors. CROSS: the ratio of institutional shares to total outstanding shares. BLOCK: the percentage of blockholder ownership. GOVOWN: the ratio of government shares to total outstanding shares. GOV_I: the absolute number of government investors. GOV_APP: the ratio of the number of political-related directors to the total number of directors. ROE: computed as the net income divided by the shareholder's equity. TSR: the total return on shares assuming dividends are reinvested. ROA: calculated by dividing a company's annual earnings by its total assets.

	2001-2003 data		Normalised data	
Description of path	**path coefficient**	**t value**	**path coefficient**	**t value**
BDOWN <-- BOARD	1		1	
OUTSIDE <-- BOARD	-0.46	-3.34***	-0.33	-3.53***
MANOWN <-- BOARD	0.35	6.79***	0.35	8.25***
BD_Q <-- BOARD	-0.25	-1.92**	-0.06	-0.72
FINOWM <-- INST	1		1	
BANK_D <-- INST	3.90	6.18***	3.66	10.09***
CROSS <-- INST	2.21	3.33***	1.12	3.90***
BLOCK <-- INST	1.40	3.13***	1.22	4.76***
GOVOWN <-- GOV	1		1	
GOV_I <-- GOV	0.29	7.43***	0.09	4.83***
GOV_APP <-- GOV	1.13	10.24***	7.17	4.48***
ROE <-- PERF	1		1	
TSR <-- PERF	1.19	4.01***	0.94	6.97***
ROA <-- PERF	0.59	14.05***	0.59	22.03***
Direct Effect				
INST --> BOARD	-1.62	-4.21***	-1.21	-5.55***
GOV --> BOARD	-0.19	-3.32***	-0.08	-1.98**
INST --> PERF	-0.06	-0.25	-0.11	-0.26
GOV --> PERF	-0.02	-0.16	-0.01	-0.36
BOARD --> PERF	0.36	3.83***	0.33	4.73***
Indirect Effect				
INST --> BOARD --> PERF	-0.58	-2.90***	-0.40	-3.69***
GOV --> BOARD --> PERF	-0.07	-2.55**	-0.03	-1.83*
Total Effect				
INST --> PERF	-0.64	-1.79*	-0.51	-1.80*
GOV --> PERF	-0.09	-1.31	-0.04	-0.75
Observations	400		1000	
GFI	0.88		0.88	
AGFI	0.81		0.81	
SRMR	0.09		0.11	
RMSEA	0.11		0.12	

* p<0.1; ** p<0.05; *** p<0.01

Table A4-4 Structural parameters: Governance (t) and Firm Performance (t+1), Taiwan, without MANOWN

BDOWN: the percentage of board ownership. OUTSIDE: the percentage of outside directors. BD_Q: the percentage of directors who occupy more than three positions in the company. BLOCK: the percentage of blockholder ownership. FINOWN: the ratio of financial institutions shares to total outstanding shares. BANK_D: the ratio of the number of bank representatives on the board to the total number of directors. CROSS: the ratio of institutional shares to total outstanding shares. GOV_I: the absolute number of government investors. GOVOWN: the ratio of government shares to total outstanding shares. GOV_APP: the ratio of the number of political-related directors to the total number of directors. ROA: calculated by dividing a company's annual earnings by its total assets. TSR: the total return on shares assuming dividends are reinvested. ROE: computed as the net income divided by the shareholder's equity.

	2001-2003 data		Normalised data	
Description of path	**path coefficient**	**t value**	**path coefficient**	**t value**
BDOWN <-- BOARD	1		1	
OUTSIDE <-- BOARD	-1.63	-5.17***	-2.00	-9.63***
BD_Q <-- BOARD	-0.34	-1.31	-0.17	-1.03
BLOCK <-- INST	1		1	
FINOWM <-- INST	0.98	2.55**	0.62	4.95***
BANK_D <-- INST	3.71	2.65***	2.19	5.45***
CROSS <-- INST	0.82	1.84*	1.08	3.91***
GOV_I <-- GOV	1		0.06	1.83*
GOVOWN <-- GOV	3.38	7.11***	1.00	
GOV_APP <-- GOV	3.69	9.16***	0.60	1.99**
ROA <-- PERF	1		1	
TSR <-- PERF	2.46	4.75***	1.75	7.27***
ROE <-- PERF	1.97	12.04***	1.75	20.38***
Direct Effect				
INST --> BOARD	-1.30	-2.37***	-0.88	-3.88***
GOV --> BOARD	-0.87	-4.67***	-0.14	-1.88*
INST --> PERF	1.61	0.67	1.01	1.73*
GOV --> PERF	1.11	0.72	0.15	1.42
BOARD --> PERF	1.45	0.82	1.23	2.14**
Indirect Effect				
INST --> BOARD --> PERF	-1.89	-0.77	-1.08	-1.85*
GOV --> BOARD --> PERF	-1.26	-0.81	-0.17	-1.71*
Total Effect				
INST --> PERF	-0.28	-1.33	-0.07	-2.03**
GOV --> PERF	-0.15	-1.23	-0.02	-1.93*
Observations	400		1000	
GFI	0.88		0.87	
AGFI	0.80		0.79	
SRMR	0.09		0.1	
RMSEA	0.12		0.13	

* p<0.1; ** p<0.05; *** p<0.01

Table A4-5 Structural parameters: DOI (t) and Governance (t+1), Taiwan

BD_Q: the percentage of directors who occupy more than three positions in the company. BDOWN: the percentage of board ownership. OUTSIDE: the percentage of outside directors. MANOWN: the percentage of managerial ownership. FINOWN: the ratio of financial institutions shares to total outstanding shares. BANK_D: the ratio of the number of bank representatives on the board to the total number of directors. CROSS: the ratio of institutional shares to total outstanding shares. BLOCK: the percentage of blockholder ownership. GOVOWN: the ratio of government shares to total outstanding shares. GOV_I: the absolute number of government investors. GOV_APP: the ratio of the number of political-related directors to the total number of directors. FATA: the ratio of foreign assets to total assets. FOROWN: the ratio of foreign shares to total outstanding shares. FSTS: the ratio of foreign sales to total sales. FSE: the number of foreign listed exchange.

	2001-2003 data		Normalised data	
Description of path	**path coefficient**	**t value**	**path coefficient**	**t value**
BDOWN <-- BOARD	1		1	
OUTSIDE <-- BOARD	-1.78	-5.43***	-1.95	-8.20***
MANOWN <-- BOARD	0.36	6.62***	0.34	8.72***
BD_Q <-- BOARD	0.49	1.66*	0.63	2.92***
FINOWN <-- INST	1		1	
BANK_D <-- INST	3.66	6.12***	3.28	10.11***
CROSS <-- INST	2.00	3.11***	2.09	5.56***
BLOCK <-- INST	1.90	3.85***	1.89	6.60***
GOVOWN <-- GOV	1		1	
GOV_I <-- GOV	0.42	2.56**	0.48	3.22***
GOV_APP <-- GOV	5.30	4.61***	6.71	5.17***
FATA <-- DOI	1		1	
FOROWN <-- DOI	0.24	3.27***	0.26	5.64***
FSTS <-- DOI	2.67	6.55***	2.69	10.57***
FSE <-- DOI	0.01	1.28	0.01	1.11
Direct Effect				
BOARD --> INST	-0.96	-2.51**	-1.16	-3.58***
BOARD --> GOV	-2.55	-0.98	-2.18	-1.31
DOI --> INST	0.30	1.66*	0..32	2.34**
DOI --> GOV	1.01	0.84	0.77	0.32
DOI --> BOARD	0.45	5.72***	0.40	8.76***
Indirect Effect				
DOI-->BOARD-->INST	-0.43	-2.24**	-0.46	-3.25***
DOI-->BOARD-->GOV	-1.15	-0.94	-0.87	-1.26
Total Effect				
DOI --> INST	-0.13	-4.44***	-0.14	-7.39***
DOI --> GOV	-0.14	-3.14***	-0.10	-3.96***
Observations	394		1000	
GFI	0.87		0.86	
AGFI	0.81		0.79	
SRMR	0.10		0.10	
RMSEA	0.11		0.12	

* p<0.1; ** p<0.05; *** p<0.01

Table A4-6 Structural parameters: DOI (t) and Governance (t+1), Taiwan, without MANOWN

BD_Q: the percentage of directors who occupy more than three positions in the company. BDOWN: the percentage of board ownership. OUTSIDE: the percentage of outside directors. FINOWN: the ratio of financial institutions shares to total outstanding shares. BANK_D: the ratio of the number of bank representatives on the board to the total number of directors. CROSS: the ratio of institutional shares to total outstanding shares. BLOCK: the percentage of blockholder ownership. GOVOWN: the ratio of government shares to total outstanding shares. GOV_I: the absolute number of government investors. GOV_APP: the ratio of the number of political-related directors to the total number of directors. FATA: the ratio of foreign assets to total assets. FOROWN: the ratio of foreign shares to total outstanding shares. FSTS: the ratio of foreign sales to total sales. FSE: the number of foreign listed exchange.

	2001-2003 data		Normalised data	
Description of path	**path coefficient**	**t value**	**path coefficient**	**t value**
BD_Q <-- BOARD	1		1	
BDOWN <-- BOARD	1.34	2.23**	3.10	1.86*
OUTSIDE <-- BOARD	-2.67	-2.22**	-4.57	-1.85*
FINOWM <-- INST	1		1	
BANK_D <-- INST	3.63	6.03***	3.20	10.80***
CROSS <-- INST	2.14	3.22***	1.95	5.62***
BLOCK <-- INST	1.95	3.88***	1.52	5.78***
GOVOWN <-- GOV	1		1	
GOV_I <-- GOV	0.28	6.35***	0.47	4.34***
GOV_APP <-- GOV	5.59	4.39***	5.02	7.73***
FATA <-- DOI	1		1	
FOROWN <-- DOI	0.38	3.41***	0.33	5.76***
FSTS <-- DOI	2.81	6.05***	2.92	10.12***
FSE <-- DOI	0.01	1.82*	0.01	1.03
Direct Effect				
BOARD --> INST	-1.26	-1.82*	-2.38	-1.75*
BOARD --> GOV	-2.67	-1.12	-3.30	-1.59
DOI --> INST	0.24	1.70*	0.19	2.31**
DOI --> GOV	0.67	1.04	0.35	2.05**
DOI --> BOARD	0.29	2.23**	0.15	1.86*
Indirect Effect				
DOI-->BOARD-->INST	-0.37	-2.42***	-0.36	-3.99***
DOI-->BOARD-->GOV	-0.77	-1.20	-0.50	-2.72***
Total Effect				
DOI --> INST	-0.13	-4.46***	-0.17	-8.11***
DOI --> GOV	-0.10	-3.05***	-0.15	-5.26***
Observations	394		1000	
GFI	0.87		0.86	
AGFI	0.78		0.79	
SRMR	0.10		0.1	
RMSEA	0.12		0.12	

* p<0.1; ** p<0.05; *** p<0.01

Table A4-7 Structural parameters: Governance (t) and DOI (t+1), Taiwan

BDOWN: the percentage of board ownership. OUTSIDE: the percentage of outside directors. MANOWN: the percentage of managerial ownership. BD_Q: the percentage of directors who occupy more than three positions in other companies. FINOWN: the ratio of financial institutions shares to total outstanding shares. BANK_D: the ratio of the number of bank representatives on the board to the total number of directors. CROSS: the ratio of institutional shares to total outstanding shares. BLOCK: the percentage of blockholder ownership. GOVOWN: the ratio of government shares to total outstanding shares. GOV_APP: the ratio of the number of political-related directors to the total number of directors. GOV_I: the number of government investors. FOROWN: the ratio of foreign shares to total outstanding shares. FSTS: the ratio of foreign sales to total sales. FATA: the ratio of foreign assets to total assets. FSE: the number of listings on foreign exchanges.

	2001-2003 data		Normalised data	
Description of path	**path coefficient**	**t value**	**path coefficient**	**t value**
BDOWN <-- BOARD	1		1	
OUTSIDE <-- BOARD	-0.48	-3.41***	-0.48	-5.43***
MANOWN <-- BOARD	0.39	7.17***	0.38	10.98***
BD_Q <-- BOARD	-0.15	-0.90	0.003	0.02
FINOWM <-- INST	1		1	
BANK_D <-- INST	4.34	5.64***	3.94	9.22***
CROSS <-- INST	1.74	3.06***	1.27	3.83***
BLOCK <-- INST	1.65	3.24***	2.08	5.94***
GOVOWN <-- GOV	1		1	
GOV_APP <-- GOV	5.50	4.17***	5.47	6.17***
GOV_I <-- GOV	0.51	2.74***	0.57	4.51***
FOROWN <-- DOI	1		1	
FSTS <-- DOI	10.95	3.39***	8.20	6.14***
FATA <-- DOI	3.72	3.36***	2.64	5.92***
FSE <-- DOI	0.02	1.75*	0.02	2.70***
Direct Effect				
INST --> BOARD	-1.50	-3.53***	-1.31	-4.64***
GOV --> BOARD	-0.11	-1.38	-0.10	-1.47
INST --> DOI	-0.51	-2.64***	-0.78	-4.55***
GOV --> DOI	-0.01	-0.43	0.04	1.59
BOARD --> DOI	0.10	2.83***	0.13	4.83***
Indirect Effect				
INST --> BOARD --> DOI	-0.15	-2.34**	-0.17	-3.68***
GOV --> BOARD --> DOI	-0.02	-1.20	-0.01	-1.36
Total Effect				
INST --> DOI	-0.66	-2.82***	-0.95	-4.79***
GOV --> DOI	-0.03	-0.82	0.03	1.04
Observations	394		1000	
GFI	0.86		0.86	
AGFI	0.79		0.79	
SRMR	0.10		0.11	
RMSEA	0.11		0.12	

* p<0.1; ** p<0.05; *** p<0.01

Table A4-8 Structural parameters: Governance (t) and DOI (t+1), Taiwan, without MANOWN

BDOWN: the percentage of board ownership. OUTSIDE: the percentage of outside directors. BD_Q: the percentage of directors who occupy more than three positions in the company. FINOWN: the ratio of financial institutions shares to total outstanding shares BANK_D: the ratio of the number of bank representatives on the board to the total number of directors. CROSS: the ratio of institutional shares to total outstanding shares. BLOCK: the percentage of blockholder ownership. GOVOWN: the ratio of government shares to total outstanding shares. GOV_I: the absolute number of government investors. GOV_APP: the ratio of the number of political-related directors to the total number of directors. FOROWN: the ratio of foreign shares to total outstanding shares. FSTS: the ratio of foreign sales to total sales. FATA: the ratio of foreign assets to total assets. FSE: the number of foreign listed exchange.

	2001-2003 data		Normalised data	
Description of path	**path coefficient**	**t value**	**path coefficient**	**t value**
BDOWN <-- BOARD	1		1	
OUTSIDE <-- BOARD	-1.78	-5.43***	-1.89	-8.78***
BD_Q <-- BOARD	0.2	0.75	0.06	0.34
FINOWM <-- INST	1		1	
BANK_D <-- INST	4.3	5.64***	4.26	8.31***
CROSS <-- INST	1.71	3.00***	2.76	5.07***
BLOCK <-- INST	1.73	3.34***	2.23	5.63***
GOVOWN <-- GOV	1		1	
GOV_I <-- GOV	0.36	2.37**	0.37	2.47**
GOV_APP <-- GOV	4.92	5.03***	4.92	5.01***
FOROWN <-- DOI	1		1	
FSTS <-- DOI	9.03	3.87***	10.38	5.83***
FATA <-- DOI	3.24	3.77***	3.33	5.75***
FSE <-- DOI	0.02	1.97**	0.02	2.94***
Direct Effect				
INST --> BOARD	-1.43	-3.65***	-1.75	-5.46***
GOV --> BOARD	-0.17	-2.33**	-0.17	-3.32***
INST --> DOI	0.35	0.45	0.16	0.29
GOV --> DOI	0.11	1.20	0.08	1.50
BOARD --> DOI	0.80	1.49	0.61	1.91*
Indirect Effect				
INST --> BOARD --> DOI	-1.14	-1.36	-1.07	-1.77*
GOV --> BOARD --> DOI	-0.14	-1.37	-0.10	-1.78*
Total Effect				
INST --> DOI	-0.79	-3.05***	-0.91	-4.50***
GOV --> DOI	-0.03	-0.80	-0.02	-1.01
Observations	394		1000	
GFI	0.86		0.86	
AGFI	0.78		0.79	
SRMR	0.10		0.09	
RMSEA	0.12		0.12	

* p<0.1; ** p<0.05; *** p<0.01

Appendix 5: Granger causality test

Based on prior literature, the relationship between pay and performance can be a two-way causation. For example, given the absence of long-term incentives such as share options and the infant capital market in China, Buck et al. (2006) suggest that the pay-performance analysis can separately focus on the performance→pay and pay→performance. Using a Granger causality test, Buck et al. (2006) demonstrate that there are two-way causal links between pay and performance in the short run.

In order to test whether the relationship between pay and performance in Taiwan is also a two-way causation, we also conduct panel Granger causality test in this thesis. The equations are as follows.

$$X_{it} = \alpha_0 + \sum_{j=1}^{n} \alpha_{1j} X_{it-j} + \sum_{k=1}^{n} \alpha_{2k} Y_{it-k} + \mu_{it}$$

$$Y_{it} = \phi_0 + \sum_{j=1}^{p} \phi_{1j} Y_{it-j} + \sum_{k=1}^{p} \phi_{2k} X_{it-k} + \varepsilon_{it}$$

where i = 1,…., N; t = 1,…, T, n and p are lag lengths. In this case, Y and X are pay and performance respectively, which are assumed to have a two-way relationship. In the performance dimension (X), we include three different variables – TSR, ROE, and ROA. Y here represents average top executives' total compensation (ATEC)[209]. The sample period is relatively short term from 2001 to 2004.

Using a Wald test, the null hypothesis that 'Y does not Granger cause X' will be rejected if the α_{2k} are jointly significant. Similarly, the null hypothesis that 'X does not Granger cause Y' will be rejected if the ϕ_{2k} are jointly significant. Hiltz-Eakin et al. (1988) find that the non-stationary problem often occurs in time-series data when the number of cross-sectional units is much larger than the number of time periods (T). In order to obtain consistent estimators, which allow us to adopt the standard distribution for the Wald test statistics, we use the first difference of pay and

[209] Please refer to Section 9.3 for the calculation of average top executives' compensation.

performance variables and generalised method of moments (GMM)[210] (Buck et al., 2006). The set of control variables as used in Chapter 10 are also included[211].

Table A5-1 Results of the panel Granger causality test

Causality	Group	Wald Test	Inference
Δlog(Pay)→ Δ(TSR)	GLC	1.142	No
	Non-GLCs	1.237	No
Δlog(Pay)→ Δ(ROE)	GLC	0.921	No
	Non-GLCs	0.138	No
Δlog(Pay)→ Δ(ROA)	GLC	1.030	No
	Non-GLCs	0.256	No
Δ(TSR)→ Δlog(Pay)	GLC	4.673**	Yes
	Non-GLCs	0.220	No
Δ(ROE)→ Δlog(Pay)	GLC	0.583	No
	Non-GLCs	2.360*	Yes
Δ(ROA)→ Δlog(Pay)	GLC	0.626	No
	Non-GLCs	3.878**	Yes

* p<0.1, ** p<0.05, *** p<0.01

The results in Table A3-1 demonstrate that pay in Taiwan does not Granger causes performance. However, the reverse causation running from performance to pay does not always be supported in Table A3-1. Nevertheless, the results summarised in Table A3-1 reveal that pay does not Granger cause performance in Taiwan. The reasons which support that there is a two-way causal links between pay and performance in Buck et al. (2006) are the absence of long-term incentives and the infancy of capital market in China. However, these considerations do not hold in Taiwan because the adoption of restricted shares and warrants in Taiwan has recently become commonplace and the capital market is also relatively mature. Therefore, similar to other Western executive pay studies (e.g. Conyon and Murphy, 2000; Buck et al., 2003), we focus on performances→pay relations in this thesis.

[210] The software used here is Eview.

[211] These control variables are – RD: the ratio of R&D expense to total sales. OUTSIDE: the percentage of outside directors. BANK_D: the ratio of the number of bank representatives on the board to the total number of directors. CHAIR: a dummy variable which measures CEO duality. BLOCK: the percentage of blockholder ownership. BDOWN: the percentage of board ownership. FINOWN: the ratio of financial institutions shares to total outstanding shares. CROSS: the ratio of institutional shares to total outstanding shares. MANOWN: the percentage of managerial ownership. LEVERAGE: the ratio of long-term debt to total assets. SIZE: the natural logarithm of total assets.